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BULBS FOR POTS

AND FALL PLANTING IN THE GARDEN

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U. S. Department of Agriculture



A CATALOG OF THE BULBS OF THE AMARYLLIS, IRIS, ORCHID AND OTHER PLANT FAMILIES

Special Articles: How to Grow Amaryllis; — Saintpaulias; — Billbergias; How To Force Easter Lilies; — Daffodils, etc. Culture directions for all bulbs and plants listed.

A PERSONAL LETTER To You.

FALL 1948

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LA VERNE, CALIFORNIA



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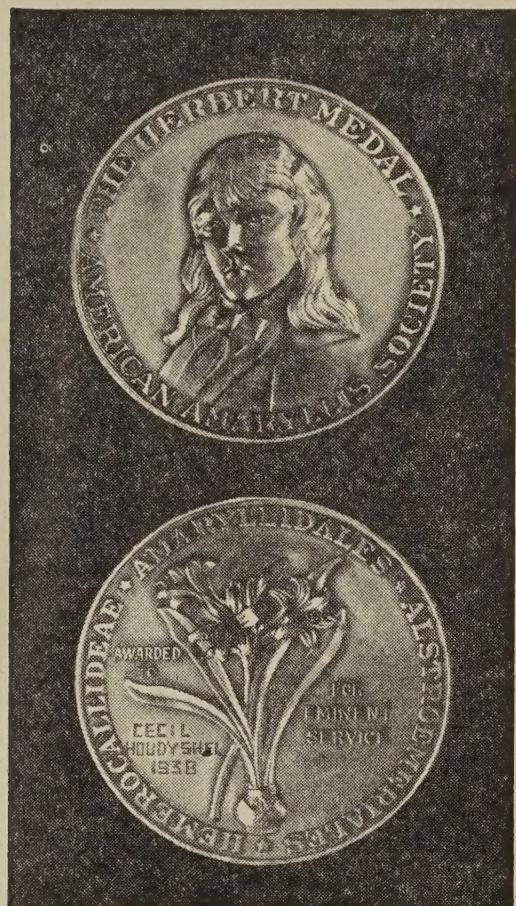
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THE NEW LOOK

Dear Floral Friends,

My custom of writing you a personal letter in each Spring and Fall Catalog was begun some 24 years ago because of my own desire to talk to you in this way, as friend to friend. It was purely the result of my own feelings and I thought that probably few would read the letters.

It is still surprising to me that so very many do, and comment upon the "Personal Letter" favorably.



I have frequently commented in these letters on events and issues of public importance. The important issues right now are the election and the cold war with Russia.

Just the other day I sat waiting my turn in a barber shop. One of the barbers was heatedly discussing politics. He lauded Roosevelt, assailed Hoover and blamed him most because he is a rich man. Touched very lightly on Truman's qualifications and consigned Dewey to the Wall Street gang.

Only one of the four or five customers present showed approval. One showed decided disapproval. Two, as I happen to know, silently disapproved.

That was bad business for the barber. A business man should not argue politics with his customers. Therefore I cannot discuss political issues or party candidates with you. Some of you are Democrats and some Republicans and will remain so.

The right man will be elected President, at least in the opinion of the majority. One of the candidates will "save the country." We should not worry about it. No disaster is likely to follow the election of either.

Some worry about imminence of war with Russia. Some writers are alarmists and draw vivid pictures of the destruction likely to occur in the next war. They should be put in jail. We know that America wants peace, not war. There is every evidence that the entire world desires peace. I am convinced that Russia cannot afford to fight a war and that they too desire peace.

But we must remember the words of George Washington: "To be prepared for war is the most effectual means of preserving the peace."

If we keep ourselves strong, we are less likely to be molested. We are more likely to be respected.

Americans are justly proud of our high standard of living. But for some, too great an abundance of every good thing may become harmful. We need to live simply. Gardens furnish more real enjoyment than night clubs. The public library or the good books in the home rest and relax one more than the races. The best social contacts are made in the churches, schools, lodges and service clubs.

People who live simply, enjoy flowers and gardens most. By gardens, I mean the outside garden, the greenhouse garden and the window garden. It is nice to have all three. One of the three should be a necessity. Anyone, any time, can afford to have flowers in abundance.

I don't know when we have needed flowers more. We have worried much about the high cost of living. But the remedy for prices that are exorbitant is simple. Don't pay them. As long as we pay high prices and the producers of the goods can sell at the

high level they remain there or even go up. The economic law of supply and demand governs prices. Artificial regulation or price control is an unsatisfactory substitute.

The Texas people who went on a so-called "buyers' strike" recently have the right idea. It has worked before and it will again. There are plenty of foods that are relatively low in price to take the place of those that are too high.

Recently I bought a T-bone steak for three. The cost was over \$2.00 for one meal. One only needs to substitute a cheaper protein food—beans, cottage cheese, Hamburg steak, for 3 or 4 meals to save enough to buy one of the most expensive and thrilling bulbs, *Haemanthus Katherinae*, which we are reducing from our long time price of \$10.00 ea., to \$6.50.

But I shall not continue to present a parallel of prices on foods for the soul and foods for the body. Both are very necessary foods. But while groceries and meats have skyrocketed in price, those other foods so necessary to our aesthetic nature are actually lower in price.

I have prepared this catalog with unusual care and have selected popular items and reduced prices where possible. Many things have made this possible in spite of the higher cost of production. In the cases of Clivias, larger sizes of Amaryllis, Daylilies, Watsonias and others, we have stocks larger than we need to maintain.

We are listing Saintpaulias, African Violets, this fall for the first time. We have given them the

NEW LOOK

and it becomes them like a diamond ring on a pretty girl's left hand. There are many kinds of "New Look" fashions. Sometimes I think when applied to the new Parisian bathing suits, it should be "Don't Look" but everyone will look at our Saintpaulias, dressed up in the new bright colored plastic selfwatering pots. They cost very little more, if any, than the usual "out of pot" prices.

For \$6.30 you can buy 12 plastic pots and a large 4" pot of Blue Boy that will make 12 or more plants and these plants are then worth \$18.00 at the single rate. They will be very useful at Christmas time. They will save you money and the task of shopping.

We can also furnish Pink Beauty in 4" pots, large enough to make 12 divisions, or more. But this variety is patented. In order to propagate it you must meet the requirements mentioned in its listing. That involves an additional expense of only 30 cents.

Every flower lover should grow at least one orchid. If he doubts his ability to grow orchids our booklet, "How To Grow Orchids" (price 25c) and the experience of growing even one plant will soon convince him that he can. But many order several plants as a beginning. Too many tho buy dry plants, recent imports, offered at from a half to a third of our prices. These are often described as "blooming size." But they don't bloom usually and they do sometimes die. But our plants are established growing plants and it pays to pay a little more and get that kind.

Shopping around to save on orchids has caused serious losses and much discouragement. Nearly all the plants received from far distant places, at very low prices, arrive completely dead. We refuse to sell our plants until they are making satisfactory growth.

We are now able to furnish Cattleya orchids, hybrids of blooming size, as low as \$7.50.

But only a few orchids are listed in this catalog. If you are interested please send for our special price list of orchids.

I regret to announce that 10,000 of those who received our Spring Catalog will not receive this one. It costs us between 7c and 10c in labor, cost of printing, postage, etc., to send you this catalog. This catalog is valuable for its culture advice but we can't afford to send it to those who do not buy our bulbs. To do so would require finances to support this business and we don't have them. The business must support itself and us.

I envy no man his wealth, but I do often think of the greenhouses full of orchids, saintpaulias and other plants and the acres of bulbs and plants I could grow with

sufficient capital. Like other men I would put the capital to work. That really is what most rich men do and some of them are famed plantsmen. The du Ponts are perhaps the most outstanding. Pierre du Pont is the holder of the Herbert Medal for his breeding and other work with Amaryllis. Mrs. William K. du Pont is a famed breeder of Saintpaulias.

Mrs. Houdyshel has made as many Kodachrome pictures this summer as she has had time to do. The slides are not for sale but if interested in renting for your garden club please write to her.

We are often asked by prospective customers if we are able to ship bulbs or orchids to them so far away as the middle west or to the New England states. Please be assured that we can. We have shipped many bulbs to Canada, Mexico, Central and South America, Cuba, Puerto Rico, Haiti, Hawaii, The Philippines, various Asiatic and European countries. We have shipped many bulbs to Palestine customers. We have customers in nearly all parts of the world and ship bulbs safely, everywhere.

Recently a well known New York orchid grower refused to send us Cattleya orchids that were in bud sheath stage, saying, "as you know, orchids cannot be shipped so far when in sheath." But we have shipped recently a budded Cattleya in a clay pot by air mail to Kodiak, Alaska. The plant arrived at Kodiak undamaged.

I am wishing you all great success with your flowers this fall, winter and next spring.

Sincerely,
Cecil Houdyshel

TERMS AND INSTRUCTIONS FOR ORDERING

The prices in this catalog cancel all former quotations.

California Customers must add 2½ % Sales Tax.

Remit by check or M. O. the full amount of your order in advance.

C. O. D. We do not ship bulbs C. O. D.

Postage prepaid on orders of \$1.00 or over. Under \$1.00, add 10c extra.

Insurance. Send 3c extra on orders up to \$5.00. 10c for orders \$5.00 to \$25.00. We accept no responsibility if you do not insure.

Special Handling costs 15c. If you send 15c extra, and insurance, your parcel post shipment will receive the same treatment as first class mail. It will arrive more promptly and safely. All valuable shipments should be protected by Insurance and Special Handling, total 18c for \$5.00 and 23c up to \$24.00 values.

Express is safer for large and valuable shipments, especially in cold weather in north. It is more expensive than mail and we ship that way, only f.o.b. La Verne. We will add extra value to equal postage.

Prices given are usually for one bulb. A dozen costs 10 times the price of one. 6 are sold at doz. rate. Unless otherwise stated, 100 cost 70 times the cost of one or 7 times the cost of one doz. 50 are sold for the price of 4 doz., not at 100 rate.

Wholesale. Dealers are invited to ask for our wholesale quantity price list or to submit a list of bulbs and quantities wanted for a quotation. We are unable to give discounts to dealers on small quantity orders from this catalog.

Foreign orders. Our prices include prepaid delivery only as far as our 8th postal zone. We can usually prepay to Mexico or Canada. It is best to include some extra on export orders. If too much, we add extra bulbs. The 100 rate prices do not apply on export orders unless customer pays transportation.

Canadian Customers. Apply to Sec. of Destructive Insect and Pest Act, Advisory Board, Ottawa, Ont. (or ask your P.M.) for Permit and mailing label and send these with your order.

Errors. We make them but correct them, if notified at once.

Partial Shipments. If everything is not included in first shipment a slip so stating

is enclosed. When final shipment is made, another slip so states. Check them with order and if short, notify us at once.

Guarantee. Our bulbs are true to name and healthy, but we do not guarantee results since we do not control the conditions under which they are grown. If, in your opinion, our bulbs are not up to our specifications, notify us at once. If you are not then satisfied with our explanation, they may be returned. No refund will be made if planted unless circumstances indicate bulbs were at fault.

Culture directions are in this catalog, hence none are sent with bulbs.

Catalogs. Spring Catalog, Jan. 15. Fall Catalog, Aug. 15. Names are dropped from our mailing list if you do not buy for two years. If not interested, please ask P. M. to return this catalog at our expense, thus saving paper, labor and postage.

Correspondence. We enjoy your friendly letters. I answer them twice a year in our Introductory Letter. It is a fact that I work twelve hours a day or more and am still unable to answer all letters requiring it. Read entire catalog before asking questions.

Identifying Bulbs. We usually can. Send flower, foliage and if possible, a bulb. Give all facts known. Enclose self-addressed postcard and attach your letter to outside of package. We do not attempt to identify horticultural varieties of Gladiolus, Iris, etc.

Time of Delivery. All bulbs are delivered within range of correct planting dates.

GENERAL CULTURAL DIRECTIONS

Rich sandy loam is the best soil. Only a few, like Bearded Iris, prefer heavy soil. A very few, like Gloriosas, must have sandy soil.

All soils require the addition of much humus. Compost all garbage, weeds, leaves, cut branches and manures. When rotted, add to soil and thoroly mix.

Fertilizers. We recommend only animal manures and compost. Fresh manure can be used on a few plants, that are growing vigorously, as a very light mulch, but after flowering. Too much fertilizer before flowering time may almost or wholly stop the flowers. When the growth of a plant becomes abnormally rapid it is unlikely to flower or produce fruit. Your over-fertilized peach tree is likely to produce no fruit.

Do not fertilize a plant in dry soil, or use any fertilizer, unless thoroly rotted in a compost heap, in the soil before planting bulbs, seeds, or plants. Water lawns, trees, any plants well the day before applying fertilizer and again a few days after application.

After blooming, many neglect their bulbs. As a result the bulbs do not flower the following year. For success one must continue to give good culture. This is the time to fertilize, irrigate and cultivate frequently, until yellowing foliage indicates the bulb is becoming dormant. During this growth period next year's flower buds are formed.

Depth of planting and distance apart often cause too much concern. Bulbs usually have sufficient adaptability to do well under widely varying conditions. If left in one place a few years, most bulbs adjust themselves to their preferred depth. Approximately, bulbs should be about 2 or 3 times their diameter apart unless their habit of growth is spreading—like Ranunculus. In such cases plant farther apart. Small bulbs as large as Daffodils may be 4" to 6" deep. Bulbs with a heavy erect stem need deep planting in order to remain erect. Plant deeper in light sandy soils than in heavy soils and in cold climates to protect from frost.

Pests. Snails and slugs are most serious garden pests. We have found the very best control is furnished by Bug-geta Pellets. They also kill cut worms and grasshoppers. Because so easy to apply, they are more economical than powders which require you to stoop in placing them. Buy the economical way, in 25 lb. bags. Price \$3.75 f.o.b. La Verne. Ants are a pest in the house and in the garden. They distribute aphis and mealy bug and tend them like domestic animals. Best control is Ant-B-Gon. Set of 4 dispensers, filled, 60c f.o.b. La Verne. Best to send by mail. Ask your P. M. the amount of postage required on 2 lbs. from La Verne and send this amount above the price of 60c. Ant-B-Gon liquid for refilling, 4 oz. 25c postpaid. Mealy bugs are a serious pest to garden and house plants. They are everywhere and must be controlled. First destroy ants. Wash them off of house plants and use a spray of water from hose to dislodge from garden plants. You will still need to spray with Garden Volc. Use any type of

sprayer and a small fly sprayer will do for house plants. Price, **Garden Volc**, 4 oz. for 30c postpaid. Use **Garden Volc** also against Scale Insects.

Garden Success requires aggressive effort on your part. One can always blame the bulbs for failure, but it does not advance one's knowledge of gardening.

ACID AND ALKALINE SOILS

Most plants thrive in mildly acid, neutral or mildly alkaline soils. But others do not have so wide a range of tolerance. Rhododendrons, Azaleas, Camellias, Gardenias, Zantedeschias, Caladiums (and other members of Arum family), Nerines, Haemanthus, Gloxinias, Begonias, Orchids and most shade loving plants require an acid soil. Some like Gladiolus prefer mildly acid to neutral soils. Bearded Iris do best in neutral to alkaline soils. The acid-alkali balance depends upon the concentration of hydrogen ions in a saturated solution. This is expressed in pH units. pH 7 is neutral. Below that the acidity increases; above it the alkalinity increases. For the mathematical, I will explain that the numeral is the negative logarithm denoting the concentration of hydrogen ions in gram atoms per liter.

Soiltex Outfit. This small kit will enable you to determine the pH of your soil. No chemical knowledge is needed. Full directions for its use are included. Price \$1.00.

If your soil is too alkaline for the plants you wish to grow, the remedy is to add humus. Imported peat is the most acid. Some American peat is acid but some of it is actually alkaline due to minerals contained. Oak leaf mould is very acid.

Canadian Peat. We can furnish this to near-by customers for \$5.00 per bale, or 10 lbs. for \$1.00. Or we will send 25 lbs. net in a strong burlap sack for \$2.00 f.o.b. La Verne. Buy locally if you can. If ordered, ask your Express Agent the rate.

Rootone induces quick rooting of bulbs, cuttings and the sprouting of seed. As the result of its action bulbs make a more vigorous root system and grow larger and produce greater increase. Slightly moisten the base of the bulb and cover with a thin film of Rootone. Dip end of cuttings into the powder. Tumble seeds in a jar or seed envelope with the powder. Roll the coated seed out and save remaining powder. Price, one-half ounce, a good supply, 50c postpaid. 1-lb. can, for very extensive planting, \$5.00.

Vitamin B-1 is a useful stimulant for plants, we believe. We have used it in transplanting bulbs and other plants with apparent usefulness. 100 tablets, 75c.

Directions for use, applying only to our own tablets. In transplanting bulbs or any plants, loose roots, dissolve 5 tablets in 1 gal. of water. Soak roots in this 15 to 30 min. Pour solution around plant when set. To stimulate growing plants, for the first application, dissolve one tab. in 2 gal. water. For succeeding waterings, use 1 tab. to 4 gal. water once a week. **Warning.** Do not soak dormant bulbs in Vit. B-1. It rots them.

Sources of more information. Subscribe for **Flower Grower**, Albany, New York. \$2.50 per year. \$4.00 for 2 years. Send directly to them. Also join local garden clubs.

Plant Societies are of the greatest value to amateur gardeners. Some of them issue year books or publications of great value. Others have meetings and lectures. I belong to and recommend those mentioned below but there are many local groups as well as national, not mentioned, that are of great value.

American Plant Life Society. Note mention of this under **Amaryllidaceae**. The **American Horticultural So.** publishes the **National Horticultural Magazine**, quarterly, which members receive. This beautifully printed and illustrated magazine covers entire field of horticulture. Send \$3.00, annual dues, to **Am. Horticultural So.**, 821 Washington Loan and Trust Bldg., Washington 4, D. C. **The Midwest Hemerocallis So.**, send \$3.00 to Pearl Sherwood, Atlantic, Iowa. **North American Gladiolus Council**, send \$1.00 to A. Bazdorff, Lincoln Park, N. J.

GARDEN REFERENCE BOOKS

Bailey's Cyclopedias of Horticulture. This 3-vol. set of over 3,600 pages describes almost every cultivated plant and has a wealth of culture information. On Orchids alone, this work is most valuable for its descriptions and culture instructions for almost every orchid in cultivation. The same is true for all types of bulbs, plants, shrubs or trees.

Price \$35.00. This is the most monumental work in any language on the entire field of Horticulture. It is an ideal gift for a plant lover. Now ready.

Hortus Second (Bailey). A Concise Dictionary of Gardening. This 778-page volume lists and describes nearly every plant offered in catalogs, and some that are not in the Cyclopedias of Hort. It contains only a few culture hints. Both works should be in every garden library. Price \$6.00.

A Southern Garden, by Elizabeth Lawrence, a handbook for the Middle South. A most useful handbook for all gardeners, north or south. Bulbs and all garden plants. 251 pages. Price \$3.00.

Enjoy Your House Plants. Excellent handbook of window gardening by Dorothy Jenkins and Helen Van Pelt Wilson. 238 pages. Price \$2.50.

Begonias And How To Grow Them. Bessie Raymond Buxton. Invaluable in growing all Begonias, including the Tuberous. 161 pp. \$3.00.

American Orchid Culture. Edward A. White. This is a complete handbook of American Orchid Culture for both commercial and amateur growers. Most interesting accounts of Orchid hunting trips, in many lands, are related. 14 beautiful color plates and many other illustrations. A beautiful, interesting, useful book. 276 pp. \$6.00.

Greenhouse Gardening For Everyone. Ernest Chabot. Important factors are noted including correct temperatures for forcing plants, bulbs and orchids. 266 pp. \$3.00.

Tuberous-Rooted Begonias and Their Culture. George Otten, veteran grower of Tuberous Begonias, with 60 years experience. An 88-page book, with 35 excellent illustrations. This is the only book entirely devoted to Tuberous Begonias. Price \$2.00.

Bulbs For Beauty. Charles H. Mueller. 296 pages, illustrated. Experienced gardeners will gain new information about bulb culture from this book. Price \$3.50.

How to Grow Orchids. By Cecil Houdyshel. A 12-page pamphlet, no illustrations, carefully explains requirements of easily grown orchids. Price 25c.

The African Violet, Saintpaulia. Helen Van Pelt Wilson. The first and still the only book on Saintpaulias. Describes 68 varieties. Gives culture and classification. Illustrated. \$2.50.

The books are cloth bound and printed on book paper. Postage prepaid. Add 3c for insurance to \$5.00. Sales Tax 2½% for California customers.

BULBS AND ORCHIDS AS POT PLANTS

Bulbs and orchids are most desirable as pot plants. They may be grown in the living room, kitchen, a light basement room or in a small greenhouse quite as well as in a large commercial greenhouse.

The following bulbs are recommended for forcing in pots: Agapanthus, Amaryllis species and hybrids, Amarcrinum, Anemones, Clivia, Dutch Iris, Elisena, Haemanthus, Hymenocallis, Ismene, Lilliums, Marica, Nerines, Oxalis, Ranunculus, Sprekelia, Tulbaghia, Veltheimia, Zantedeschia (Calla Lilies).

Nearly all bulbs may be grown in pots. Crinums do well but require a large space. Gladiolus and Watsonias are tall for the purpose, but they are forced in commercial greenhouses. Brunsvigia rosea varieties, Lycoris species and a few others bloom only the first year in pots. After that they seldom bloom again.

Plants for pots. Orchids are supremely desirable and any one can grow them. We have had reports from customers who, without previous experience, have grown and flowered hybrid Cattleyas in their kitchen and have grown them on for two or more years. **Billbergias** are unusual, beautiful and easy. **Saintpaulia, African Violets**, have always been popular with a few. Their recent resurgence in popularity is justly winning a place for them in everyone's collection. We are offering them in an entirely new manner—in self-watering pots. **Violets** too can be flowered in pots in a cool room.

POTTING DIRECTIONS

Bulbs bloom better in pots that are not too large. A 2½" Amaryllis will do well in a 6" or 7" pot. Many use a 5" size but I prefer to give as large a pot as will be favorable to flowering. Give larger or smaller bulbs of any sort, pots in proportion to this size,

that is, 2 or 3 times the diam. of bulb. Small bulbs may be planted 2" or 3" apart in any size pot.

Most large bulbs, like Amaryllis, may have $\frac{2}{3}$ of bulb above surface but small bulbs, especially Anemones and Ranunculus, should be covered about 1".

Use clean pots. It is advisable to boil and scrub the surface. Even new clay pots should be boiled, or soaked for two days to remove chemicals. Cover the hole at bottom with a piece of broken pot, concave side down. Above this place small pieces of broken pot and gravel. This helps to drain away excess water.

The drainage must be perfect and it is essential that the soil above this drainage material be of a friable texture that permits water to pass thru freely.

The best soil is a rich sandy loam with the addition of plenty of humus. For humus one can combine rotted leaf mould and old rotted dairy manure well broken up and rubbed thru a screen of smallest gauge. For most plants the proportion can be $\frac{2}{3}$ sandy loam, $\frac{1}{3}$ humus.

Fertilizers. Many advise the addition of fertilizer to potting soils. We never use any except the rotted dairy manure and leaf mould and sometimes a tablespoon of bone meal. If new roots come into contact with much fertilizer they are burned. Commercial fertilizer is especially a hazard. When the plants have become well rooted and have made a good top growth, most of them will be helped by using liquid manure. Cover manure with water and allow to settle. Pour off water and dilute further until it is a very light amber, the color of weak tea. This can be used about every two weeks but don't use it on dry soil and thirsty plants.

Sun exposure. Note requirements of plants under listings. For full sun, use a south window. For half sun use an east or west window and add a thin curtain if it proves too much. For Clivias and others requiring full shade or only a little filtered sunlight, use a north window or place on a stand at a distance from window, but always give plenty of light and good ventilation, especially in gas heated rooms.

Temperature. Most bulbs root better in a cool room of 45°. There must not be too much water given while roots are starting as it may cause bulbs to rot even when cool. When a bud or foliage shows that growth has started, gradually bring the temperature to about 70° and water a little more. The best temperatures for plants vary. Some like more warmth than others. This is indicated in the special culture directions for these plants.

Probably more failures in forcing bulbs result from starting the forcing process (bringing the bulbs into a warm room with more light) before they are well rooted, than from any other cause. When bulbs are well rooted bring them into a warmer temperature by easy stages, not suddenly from 45° to 75°. Gradually increase the water supply.

When thru flowering, do not forget them but keep them growing as long as possible. An Amaryllis bulb will grow for 5 months or longer before going dormant.

CATALOG ARRANGEMENT

is by Plant Families, according to their relationships.

In the following lists the **genus** (plu. **genera**) is mentioned first. After it, the **species** (plu. also **species**) or horticultural variety is named. The initial of the genus is used for the second and succeeding species. Thus A. will stand for Amaryllis or Agapanthus depending on the genus last named in full. When a person's name in parentheses follows a plant's botanical name, that person is the botanical authority for the name.

THE AMARYLLIS FAMILY—Amaryllidaceae

This Family includes the following bulbs, Agapanthus thru The Alliae.

The American Plant Life Society was founded in 1934 as The American Amaryllis Society. The interests of the Society have recently been enlarged to include other bulbs and plants and the name changed, but with no lessening in interest in Amaryllids.

The annual book, "Herbertia," is devoted to Amaryllids. It consists of about 250 pages, beautifully illustrated, on fine book paper, and is edited by Dr. Hamilton P. Traub

of the U. S. Dept. of Agriculture, the greatest living authority on the Amaryllidaceae. Each member receives a copy.

The members also receive the occasional publication, "Plant Life," on other bulbs and plants. The next issue will be on *Zantedeschia*.

Those who grow Amaryllis as an interesting and intellectual hobby and who love their vivid beauty, are invited to become members of the society. The annual dues are \$2.50 per year, which you may send me.

Fourteen volumes of *Herbertia* have been issued. These back numbers may be bought only by members. Price of vols. 1 to 10 complete, \$35.00. Vols. 11 and 12, 1944 and 1945, \$4.50 each. Vols. 13 and 14, 1946 and 1947, \$3.50 ea. Thus 14 vols. complete cost \$51.00. The purchase of complete sets is recommended only to advanced collectors and specialists.

If you want vol. 15, apply now for membership for 1948. The book will probably be distributed by or before next spring. *Herbertia* is both a scientific and a popular work. In it are published the results of basic research which lead to further progress as well as many popular articles which will bring new information to all gardeners.

Amaryllid nomenclature. Carl Linnaeus, father of modern botany, made the first, rather complete scientific arrangement of plants according to relationships in the 18th century. His information about many plants was wholly inadequate to achieve perfection. Comparatively few plants were even known. Even in my later first French edition, 1798, nearly all American epiphytic orchids were placed in one genus, *Epidendrums*, and under the genus *Amaryllis* he included certain *Crinums*, *Zephyranthes*, *Sprekelias*, *Brunsvigias*, *Nerines*, etc. Botany is a progressive science and later explorations and discoveries have made possible many improvements in plant classifications and have required changes in nomenclature. Horticulturists are often loath to accept the new classifications and names. But we must do so even if inconvenient at first. It is not logical to continue an error.

In order that our customers may not order a bulb they already have under an obsolete name, we give both old and new names.

Agapanthus means Love Flower. Blooms in spring and summer. Large attractive umbels, blue or white on tall erect stiff stems. Easy to grow in south in full sun or slight shade, any good soil, and in the north in tubs or buckets, wintered in basement. Delivery any time except for the deciduous variety, *mooreanus minor*, which is delivered in winter to early spring.

Agapanthus longispathus. New species. Flowers resemble *Orientalis* but blooms more profusely and is more graceful. 50c.

A. orientalis (umbellatus) Blue Lily of the Nile. Our variety is an especially fine one with deep blue flowers on a tall stem. Many flowers are produced in spring and thru summer. 50c ea. Extra large roots, 75c.

A. orientalis, "Sky Blue." Lovely light blue. 50c ea.

A. orientalis, var. Albidus. Has pure white flowers. \$1.00 ea.

Alstroemeria (pronounced -stre-, not -stro-). Very showy flowers, many in an umbel on a long, slender, stiff stem. The pastel tones are rich and varied, the form unique. Long lasting and popular as commercial cut flowers.

Culture. Good under drainage is essential, therefore plant if possible in sandy soil to which is added much leaf mould or other humus. On heavy soil add 6" sand, equal or greater depth of leaf mould and spade to depth 6" below original soil surface. Plant before Nov. 1 if possible. Half shade or a little less is best. Tender semitropical winter growers, but can be grown in pots in north. Dry them off but do not dig when tops ripen. Begin watering in fall when growth starts.

Alstroemeria chilensis. Most attractive pastel tones of white, pink, red, yellow and orange. 20c ea. \$2.00 doz.

A. ligtu angustifolia. Flowers similar to *chilensis* but larger and on a taller, stiffer stem, often 3 ft. 30c ea. \$2.75 doz.

A. ligtu Stinsoni. Like *angustifolia* but deeper colors. 30c. \$2.75 doz.

These two varieties of *A. ligtu* are the most desirable of all and the best for

production of commercial cut flowers. One can increase the stock by planting the freely produced seed. For pure seed, do not plant two varieties near together or the insects will cross pollinate them.

A. pelegrina. "Lily of The Incas." Dark rose. Inner petals spotted reddish purple. 25c ea. \$2.50 per doz.

A. pelegrina alba. Pure white Lily of The Incas. 25c ea. \$2.50 doz.

A. Assorted colors and varieties. 20c ea. \$1.50 doz.

Amarcrinum Howardii (Crinodonna Howardi is the better name.) A cross between *Brunsvigia rosea* (*Amaryllis belladonna*) and *Crinum moorei*. Flowers are a pure pink and very attractive. As it is a winter bloomer and profuse, it is a valuable bulb for a large pot. \$2.50 ea. Jumbo bulbs that will give more flowers, \$4.00.

Amaryllis Linn. This genus as constructed by Linneaus was untenable because he included plants now known to belong to other genera. The invalid name *Hippeastrum* was used by both Herbert and Baker, but now we are scientifically correct when we use the name that has always been most popular. To the word "Hippeastrum," literally translated "horse star" we can now say "horse feathers," and forget the word.

Amaryllis are the easiest, the most showy and popular of all bulbs for growing in pots. Equally desirable for southern gardens where they are hardy along the east coast to N. Car. and on the west to Vancouver. In the middle section they may be grown as far north as Ark. and Okla., but note special directions for colder sections.

How To Grow Amaryllis. In the garden, in the deep south where temperatures go only a few degrees under freezing, Amaryllis bulbs need to be covered only about an inch or two. Farther north they should be planted about an inch below frost penetration, in protected places and mulched with straw, leaves and/or brush. In Okla., a customer reports a depth of 4" with mulch is safe. Let 6" and in sandy soil be the limit, preferably less. Why not mound them over with soil and mulch to be removed in spring?

In Pots. A bulb 3" or less in diam. needs a 7" pot, and larger bulbs need larger pots. It is better to pot in Nov. or Dec. Better blooms result. But one can pot them as late as March and it is better late than never. The early potted bulbs will start more easily and give better flowers, but in either case the flowers will be better and will show more fully their full quality the second year.

The best potting soil is a rich sandy loam. If not sandy use a friable loam and add sand. To this add an equal quantity of well screened and well rotted dairy manure and leaf mould. Use no fresh or partially decayed manure and no peat or sphagnum. One tablespoonful of bone meal to each pot is recommended. Mix all ingredients thoroly.

In potting the bulbs, carefully preserve any living roots, even remnants. Clean but do not scrape the base of the bulb and dust the moistened surface of base and the roots with Rootone. If there are no roots, coat base of bulb with Rootone, which will hasten their formation.

Pot the bulb two-thirds above surface and water well. After this keep the soil only slightly moist until growth starts, then gradually increase. When first potted set them in a cool, light room but not in sunlight. The best temperature now is not over 50°. The bulbs must have sufficient time to form a good root system under these conditions. If placed in a warm room and exposed to the sun, top growth will be made before roots, and the results are poor flowers or none.

When you are sure that roots have formed, but not before, water the plants as directed with Vit. B-1. But be sure to leave the bulbs a sufficient length of time in a cool room. They need this period of dormancy and sufficient time to make a good root system. Many fail because they try to force the bulbs before they have rested and have made good roots. If you get a poor flower it may be because the bulb had no roots and had only the sustenance stored in the bulb from which to make flowers. Lack of a good root system to nourish the flower will affect the quality of the flower in every way—size, substance and even color. So, don't remove pots from the cool room too soon. Wait until they demand it by top growth. Then bring the pots by easy stage to a temperature of 50°, 60°, then about 70°.

After flowering the bulb has shrunk and a long period of growth is necessary.

If good growth is made at this important stage, the bulb will become much larger and offsets may be made. Keep them growing as long as possible. When the weather is warm outside the pots may be plunged in the garden. If rim of pot is sufficiently below soil surface the roots may emerge and add range to the root system. Or better still, shift the bulb and the unbroken lump of soil to the garden. Water liberally during growth and when in good growth use manure water or mulch with manure. This is good advice for pot grown bulbs as well, but don't give heavy feeding to a sick or starved bulb. Plants, animals and people must have enough vigor to digest and assimilate food. If they do not have this, it becomes a poison.

Keep the bulbs growing as long as they will grow. When the foliage begins to yellow, about Nov. usually, one may reduce water, and give them a rest. Store pots in a cool room as for starting.

Usually the summer's growth will have increased the size of the bulbs sufficiently to require shifting to a larger pot. The new pot should be large enough to accommodate all the roots. Do not remove or injure any of the roots and contrive to distribute them thruout the soil.

When repotted, water at once to settle soil around the roots. Thereafter they should receive very little water, only enough to prevent drying out and loss of roots. They should remain in a cool room. They need a period of rest, altho leaves do not always die back. When growth begins, start again the natural spring time change to higher temperatures, repeating the procedure followed when you planted the dry bulbs. But your bulbs are now much better bulbs. They are not dried out and they have or should have many roots. If kept too wet or too warm while dormant, the roots may rot. But if you handle the bulbs carefully you may expect more, larger and better flowers the second year. With experience you may become skillful in having bulbs bloom even by Jan. 1 and others up to May 1.

How to judge the quality of the flowers of Amaryllis hybrids. The perfect flower of the Leopoldi type should be 5" to 8" across. The petals should be well rounded and broad, overlapping each other, no twisting of petals, and they should form a wide open, flat flower. The texture should be smooth and firm, of good substance. The tube should be short. There should be little or no green in throat but as the species Leopoldi contains considerable green there are few hybrids that do not contain some green. Very few are perfect in any respect.

There should be no dull colors, like brick red. But colors should be bright and of every imaginable tone within the range of this genus.

Self colors are desirable to go along with stripes and other variations. But it is difficult to get other than red selfs and these are unusual. A few of our Select Strains, American Hybrids are pure red, scarlet, rose or pink selfs. But they are few and not separately labeled. Don't order self colors or any colors except as listed.

Please note. There is no quantity discount on Amaryllis except as noted with listing.

Amaryllis advena. Oxblood Lily. 5 to 8 ox-blood red flowers in an umbel, on a 10" slender scape, preceding foliage. Fall bloomer. **Culture.** Not suitable for pot culture, but so nearly hardy that in mild sections of north it will succeed. In Michigan, in the section where peaches are grown, this Amaryllis has been grown commercially. It may be planted 6" deep and mulched, in a protected situation. Full sun exposure, heavy or medium loam soil is good but does well in lighter soils also. Price 50c ea. \$4.50 doz. Order at once, before late Sept.

A. psitticina. Species from S. Brazil. Large bulb and plant. The large flowers have green tinted throat with carmine lines radiating to the carmine edge of petals. The effect is of a very pretty red Amaryllis. Here this species flowers in winter and is a free bloomer. Price \$6.00 ea.

A. Hybrids, Select American Strains. These are the best American hybrids, of Leopoldi ancestry. Many Amaryllis sold are chance seedlings grown from seed collected in the field. These are likely to produce the sturdiest bulbs. From a vegetative standpoint they are the best. But for the most beautiful flowers, breeders select the best

parents having the most beautiful flowers, grow them in a greenhouse and cross them by hand. Our Select Strains are produced thus.

Color Classes. These are named from the parents. When they first bloom, off colors are removed or "rogued" out. They are again rogued the second year. Nevertheless, the color classes are only approximately correct. Many off colors are missed when rogueing. There is also a wide difference in opinion as to color. One calls a flower pink. Others may call it rose. Therefore, we do not guarantee the color but we do exchange them if the customer is not satisfied. Seldom, however, is a customer willing to part with a bulb of this strain, even tho it be an off color. The following color classes are as selected and named by the originator. When you get a wrong color and do not wish to keep it, notify us at once and await instructions.

Select American Strains, Assorted Colors. 2½" diam., up. 90c ea. 3 for \$2.50. \$9.75 doz.

Select Am. Strains, White Background. White, with light to medium markings of color. 2½", up, \$1.00 ea. 3 for \$2.85. 3" diam. \$2.50 ea.

Select Am. Strains, Near White. These are much nearer to pure white than White Backgrounds. Large bulbs, nearly 3" diam. or over, \$5.00 ea.

Select Am. Strains, Red Shades. 2½", \$1.00 ea. 3 for \$2.85. 3", \$2.50 ea.

Select Am. Strains, Scarlet, 2½", \$1.00 ea. 3 for \$2.85. 3", \$2.50 ea.

Select Am. Strains, Rose. 3", \$3.00 ea. 3½" up, \$4.00 ea.

Select Am. Strains, Large sizes, assorted colors. These should all give two flower scapes and most of them give three. 2¾"-3" diam., \$1.75; 3"-3¼", \$2.50; 3¼" up, \$3.00.

Select Am. Strains, self colors. This season I marked a few bulbs that are self colored. These have no stripes or prominent markings beyond a slight flecking in a small area of a lighter tint of the same color. Red or Scarlet, \$6.00 ea.



A. SELECT STRAINS

A. American Hybrids, Assorted Colors. Good Amaryllis from various sources. Not dime store quality. Blooming sizes, 50c. Large, nearly 3" or over, 75c ea.

A. Ambigua Hybrids. These are *A. ambigua* crossed and re-crossed with White Backgrounds. They are not especially an improvement except that they are rather more sturdy, tall, and some are fragrant. Most of these are White with usual markings. \$1.00 ea. Extra large, 3" to 3½", \$1.50 ea.

A. Houdyshel's Hardy Hybrids. We have been calling these *Rutila* hybrids but a long study of their characters leads to a doubt whether the species *rutila* is in their ancestry. But there is no doubt about their hardy, thrifty nature. Do not be misled by the use of "hardy" to describe them. They are not winter hardy in Minnesota or the coldest states. But they are the toughest, hardiest Amaryllis and this season a customer in Fort Scott, Kansas, who had taken our advice and

covered the top of the bulb with 4" of soil, gave a heavy mulch of straw and manure over winter, reported that these bulbs were uninjured and bloomed beautifully this spring altho they had a low temperature of 17° below zero.

Possibly with a pile of brush above the mulch they might be wintered in the garden even farther north. There is no doubt that this strain extends the northern boundary which limits Amaryllis hardiness.

This is an extremely vigorous, rapid growing and multiplying strain and equally prolific with flowers. Most of them are similar in color, orange scarlet with white throat and green keel. An ideal strain for outside planting and landscape effects. Their bright vivid color "hits you in the eye." Altho not an exhibition type, many will like them in pots, where they are easier to grow than the more aristocratic hybrids, and their bright cheerful colors in Feb. and March will be most welcome. Price, top size, nearly 3", 75c ea. \$7.50 per doz. \$50.00 per 100, prepaid.

Diener's Posthumous Hybrids. Grown from small bulbs of selected seed by Diener in the last year of his life, these should be his best. They are Equestre type, with longer and more narrow petals than the Leopoldi type. Often 5 to 8 flowers in an umbel, but to get large flowers that approach the size claimed by the originator one must disbud, leaving not over two on a scape. This strain blooms from smaller sizes and as they multiply rapidly, do not often become extra large. \$2.00.

Amaryllis Sibyl Houdyshel,
Johnsonii and others are withdrawn to increase stock.

Amaryllis Seed. Usually we do not have enough seed for our own planting but this year we can spare a limited amount. Please order as early as possible and plant soon as Amaryllis seed loses its vitality rapidly. When one year old, probably less than one-half will grow. This seed was gathered in July and is fresh but we do not have time to examine each seed to be sure of plumpness so we will put a very reasonable price on it. This is all Select Strain seed. Price 50c per 100 with any order for Amaryllis bulbs. It is offered only to those who buy Amaryllis bulbs.

Plant Breeding is an interesting science and art. Undertaken as a hobby, it has often resulted in fame. It will involve and develop great skill, ideals of beauty, good taste and intelligence. I suggest you start with our Select Strains. Get several bulbs and use the pollen only from those you like the best. Cross pollination is easily accomplished by placing the powdery pollen borne by the six stamens on the stigma in the center. The stigma when ready for pollen will usually be opened into three parts. When the seed pod is ripe it bursts open and may be removed and dried. Plant the seed (soon) in a fine sandy loam containing plenty of humus. Do not use peat. Cover seed about $\frac{1}{2}$ ". Seedlings may be grown in pots in house or greenhouse where they will continue to grow all year without a dormant interval until they flower. Usually this requires 2 to 3 years. In the warm south they can be grown outside under the half shade of lath.



A. AMBIGUA HYBRID

But frost usually destroys foliage in winter and cool nights interrupt growth, slowing development.

Brunsvigia rosea (Sym. *Amaryllis belladonna*, Aitson). Familiar in Calif. and the south as *Amaryllis belladonna*, Naked Lady Lily, etc. It is hardy where minimum winter temperatures are about 10° above zero. They do not succeed in pot culture.

The many flowered umbels are of the most exquisite pink and the most entrancing fragrance. Only in the rose and the Belladonna Lily does nature assemble these two qualities in one flower in such perfection.

Brunsvigia rosea major. Earliest to flower and largest. Fragrant, pure pink flowers. A favorite florists item. M. 35c. L. 50c. Blooming sizes, \$15.00 per 100, f.o.b La Verne.

B. rosea minor. Flowers pink with light throat, in Sept. - Oct. 50c.

B. rosea var. Ethel. Very dark rose. Very beautiful. \$2.00.

B. rosea Parkeri. This type originated at Kew Gardens and was later developed and probably improved by a Dutch grower. It is probably a hybrid between *B. rosea* and another *Brunsvigia* species. We offer seedlings of our original importation that are variable in color, ranging from medium to dark rose. \$2.50 ea.

B. rosea, var. Hathor. This is an Australian hybrid between *rosea* and another species. The large flowers are white tinted cream in throat. Rare. \$8.00 ea.

Clivias. Altho easy to grow and to flower by the amateur they will always be classed with the aristocrats of flowering bulbs, because the flowers easily place them there. They increase so slowly by division that the chief method must be thru the freely produced seeds. But Clivias require at least five years and usually seven, to flower from seeds. This time involves expense. They can never become very cheap.

Clivias have evergreen, strap-like foliage somewhat resembling that of *Amaryllis*. The flowers are produced in umbels of 10 to 25, in rich and exquisite tones of orange, in March and April. When not in flower the deep rich green foliage and later the red fruits are most ornamental.

Culture. They are usually grown in pots, even in the south, as more perfect foliage is thus possible, and when in flower one wants them in the house. We grow them in a lath house, lath spaced $\frac{1}{2}$ " apart, and in garden under Avocado (evergreen) trees. They must have shade with only a few flecks of sunshine, but plenty of light and air.

Clivias must never be dried off or allowed to lose their foliage. Keep them well watered after flowering, all summer and fall. Liquid fertilizer occasionally helps. When growth ceases in late fall rest them by giving them less water. But keep moist enough to prevent wilting of foliage. At this time they should have a cool room with temperatures from above 32° to not much over 50°. Pots should be 8" for a small plant up to 12" for larger. As they grow and increase, do not divide but shift to larger pots. Drainage must be perfect. Potting soil is described under "General Culture Directions." pH 7 is about right. One cannot guarantee a Clivia to flower the first year after moving tho they usually do.

The foliage of our Clivias, grown outside in the ground, will not be as perfect as that of pot grown plants. But when potted, they replace the old foliage in a few months and become specimen plants.

Clivia miniata. Wide open flowers of soft yellow orange. Hardest, \$2.50.

C. miniata hybrids. Similar to the species "miniata" in foliage, hardiness, wide open flowers, etc., but there is some variation in color and form of flower. Most of them are in light orange tones. A few are dark and a few have a white throat. Do not express your color preference for any Clivia hybrids as we cannot tell the color from the plant. Blooming size, \$3.00. Small plants, \$1.00 and \$2.00 ea.

C. nobilis hybrids. These have darker orange flowers. The leaves are broader and more blunt and rounded at apex. \$6.00 ea. Small plants, \$3.50 ea.

DAFFODILS AND NARCISSUS

Both belong to the genus *Narcissus* of the Amaryllidaceae.

Culture. All Daffodils except the *Polyanthus* *Narcissus* are hardy both in the mild

climate of the south as well as in the colder northern states. In the north especially it is best to plant the bulbs rather deep where the frost does not reach. Six inches is about right. Smaller bulbs may go more shallow and be mulched. In California too and all the south there is an advantage in deep planting. Plant September to November.

Sandy loam is the best soil, but any good rich garden soil will do. Use no fresh manure. The addition of lime to the soil is good, especially if leaf mould is used in sandy soils.

In pots. Daffodils force easily. Pot the bulbs early for earlier flowers, Sept. to Oct. The soil should be $\frac{2}{3}$ sandy loam, $\frac{1}{3}$ leaf mould and perfectly decayed dairy manure (use both or either one). Water the pots well. To start Daffodils, plunge the pots in a cold frame or pit outside in the shade, after the first watering, and cover pots with 6" of sand, surrounding the sides well. Thus they will be cool and roots will develop. The sand will prevent evaporation.

As soon as they are well rooted (10 or 12 weeks will be required), they can be brought inside. Examine the pots first in about 6 weeks. The roots should penetrate the soil to the sides of the pot. By reversing and tapping edge of pot one can with care lift a pot up to see if roots have reached the proper stage. There is no use to try to force the bulbs before abundant root development is reached. Only failure results.

The room temperature for forcing can be about 55° at night. Not much warmer during day. Set pots in a sunny window. Shift Daffodils to the garden when thru blooming as they cannot be forced two years in succession.

Trumpet Daffodils are hardy north and south but as they do not succeed in the tropics, do not plant in S. Fla. The following list of superb varieties are offered in large round bulbs. Plant one or more of each and really learn about daffodils. If not stated, the price per doz. is 10 times the price per bulb. In the description, E. means early; M., mid season, and L., late blooming.

When you compare prices, you must also compare sizes. The following bulbs are large, No. 1, round bulbs, the best forcing size. They give two or more flowers per bulb. Smaller bulbs are offered for lower prices. For example, our cheaper King Alfred bulbs are No. 2 round.

Aerolite. Pure golden daffodil. Very large but beautifully proportioned and graceful. Medium early. 30c ea.

Alaska. Giant flower of deepest gold. Trumpet deeply frilled and edges recurved. Forces easy in pots. Mid season bloomer. 30c ea.

Alasnam. Wide, densely frilled trumpet of pure deep yellow, a shade deeper than perianth. Much earlier and better than King Alfred. 25c ea.

Ben Hur. Glorious "loud speaker," deeply frilled trumpet of pure Roman gold, 2½" wide. Immense flower, beautifully proportioned. M. 35c.

Dawson City. Golden yellow. Broad flat flower of smooth substance, with flanged trumpet. Fine garden and exhibition variety. L. 30c.

Fortune. A giant Incomparabilis of perfect form, smooth texture, very large open and beautifully frilled trumpet of soft orange and creamy yellow petals. E. 50c.

Golden Harvest. Deep golden yellow. Petals well formed and overlapping. Trumpet well shaped and proportioned, rolled back at brim. One of the largest in existence. M. 35c.

Hector Treub. Deep golden yellow. Improved King Alfred. Easy, early forcer in pots. 25c.

Hendrik Ibsen. Pure deep gold. Very graceful and very free flowering. Extra early. 20c. \$2.00 doz.

King Alfred. Favorite of florists and gardeners. Deep golden yellow, exquisite and graceful. Good blooming size, rounds, 15c ea., \$1.40 doz. Per 100, \$7.75 by express, f.o.b. No. 1 round, 25c ea., \$2.50 per doz. Per 100, \$12.50, f.o.b.

Winter Gold. Very early, flowering in Feb., or earlier here. You must plant early for the earliest flowers. Bright yellow petals. Long, straight and nicely frilled trumpet. A very showy garden daffodil. 30c.

Habranthus. Formerly considered as a subgenus of *Hippeastrum*. When this genus

was reorganized, most of the species were placed in *Amaryllis* and this subgenus became the genus *Habranthus*. Usually they have a one flowered scape. The culture is about the same as for *Amaryllis advena* as they are usually fall bloomers and winter growers.

Habranthus brachyandrus. The long tubular flower is very striking in color, lavender pink with a deep purple throat and is quite large. They begin to flower in late summer and continue into the fall. Hence should be ordered early. 75c.

H. robustus. Baker says the flower is rose red. It appears lavender pink to me. 25c ea. \$2.00 per doz.

Haemanthus. This south African genus of the *Amaryllis* family is rare in cultivation, therefore unusual. They are hardy only in almost frost free climates like So. Calif. and Florida, but are rare pot plants in the north. The soil must be well drained and should be composed of a mixture of loam, leaf mould and peat, with plenty of sand. The entire mixture should feel gritty. When in vigorous growth, the plants can use weak manure water or light, successive mulchings of manure.

Haemanthus albiflos. Two or more rather stiff erect evergreen leaves. The small white flowers, 100 or more, are in a dense umbel. A rare and unusual plant from Holland, very pretty. \$3.00 ea.

H. coccineus. **Blood Lily**. This rare amaryllid usually produces two leaves, which lie almost flat on the ground. They grow all winter and die down in early summer. In early Sept. or later the flower scape appears, preceding foliage. This scape furnishes part of the floral display, being marked by contrasting red spots on a bright background. The 4" umbel consists of very numerous small, densely placed blood red flowers. These are followed by the fruits which turn red upon ripening. Each fruit will contain one or more large seeds which may be planted and handled like *Clivia* seed. In the south plant the bulbs with top even with soil surface. Sandy loam preferred, abundant leaf mould and a little peat. Half shade. Easy in pots, where half of bulb may be above soil. Stock very limited. Order early. \$3.00 ea. Jumbo bulbs, \$4.00.

Haemanthus Katherinae. The bright red flowers fill a large rounded umbel often 10" or more in diameter. I have counted nearly 125 in an umbel. The broad banana-like foliage droops gracefully into an umbrella form. Scarlet seeds follow the flowers. A plant in flower is an unforgettable sight of tropic beauty. The entire plant is of quite large proportions, the foliage and flower umbel reaching a height of 30" to 36". Introduced from Natal in 1877, they are yet very rare. Give them a 14" to 16" pot or tub.

Katherinae is almost evergreen but usually tops either die or decline in January. We can move them between January to March but if wanted you should order at once.

We usually list these only in our spring catalog as they cannot be moved until about Jan. This year we can spare about 75 bulbs and we decided to offer an inducement for advance orders. Send full payment now and when dormant we will send a blooming size bulb, one that has in fact bloomed this year, for \$6.50. Top size for \$8.50. None reserved unless fully prepaid.

H. puniceus. Smaller, evergreen plant that makes a desirable pot plant of easy culture. Small umbel of scarlet flowers, on a mottled 12" stem,



HAEMANTHUS KATHERINAE

followed by red fruits. Flowers in spring as a pot plant. Delivery any time. \$3.75 ea.

Hemerocallis. Daylily. The flowers range in color from dark bronzy red, thru pastel tones of pink to orange and yellow. They are borne on a branching scape well above the foliage.

The Greek name, meaning "beautiful for a day," refers to an individual flower. But these are so freely produced, thru a long period, that "beautiful every day" would be more apt, as a collection of several sorts show masses of flowers thruout the spring, summer and fall and here we often have some winter flowers. The modern sobriquet of "The Perennial Supreme" is well deserved.

Culture. While their beauty is their greatest recommendation, their easy culture and hardiness add to their desirability. I have known abandoned plants here, where we have arid, hot summers, to persist for years. They grow well in full sun. Slight shade is better. If given constant moisture about their roots, preserving this and coolness of the earth with a good mulch, the plants are ideally situated and respond with generosity. They are hardy even in severe winters in the north. They are fibrous rooted, not bulbs, and must be planted at once when received. Altho they can be moved any time, it is better to ship from late fall to early spring.

They are an almost perfect border or landscape plant, never have to be dug and replanted. All that you must do for them is keep the weeds down and water. A heavy leafy mulch helps every way.

In Daylilies, the sepals are colored and petal-like and are an essential part of the floral display.

Hemerocallis Araby. A lovely pastel color, with the effect of bronze on gold dust. 30". \$2.00.

H. Bagdad. Coppery red over orange veins. Mid-zone of madder brown. Very striking large flowers. 3 ft. June-July. \$1.00.

H. Calypso. Large, fragrant lemon yellow flowers. Opens in evening. 42". June-August. 30c ea.

H. Cecil Houdyshel. A Dr. Traub origination. A deep crimson, with an old copper shade that makes it outstanding in our garden. Slight shade gives better color to flowers. 3 ft. June-July. \$2.50 ea.

H. Chengtu. Brilliant coppery orange-red with carmine mid-zone. 3 ft. July-Sept. 50c.

H. Cinnabar. Cinnamon sprinkled over orange, gold-glistening. 30". July-Aug. 60c.

H. Crown Prince. Color like Mikado. 30". June-Aug. 25c ea. Per doz. \$2.25.

H. Dauntless. Cadmium yellow. Fulvous red blended in mid-zone. Pastel effect. 30". June-Aug. 75c.

H. Florham. Still popular old hybrid. Large, golden yellow. May-July. 50c.

H. Florida. Pastel shades. Light chrome yellow with rose blush. Darker mid-zone. \$2.50.

H. Fragrance. A fine deep yellow. Fragrant. \$2.00 ea.

H. Kwanso. The Double Orange Daylily. 25c ea. 3 for 50c.

H. Linda. Petals, ruffled golden yellow, flecked with cinnamon, and a rose zone. Sepals, pure yellow. Very lovely. \$1.50 ea.

H. Margaret Perry. Brilliant orange-scarlet. 4 ft. July-Aug. 35c.

H. Mikado. Orange with mahogany-red zone. A favorite. 3 ft. May-July. 50c.

H. Nubiana. Dark chocolate-red with yellow stripe in petals. One of the darkest varieties. 2 ft. \$3.00 ea.

H. Patricia. Pale yellow. Large fragrant flowers. 30". July-Aug. \$2.00.

H. Radiant. Rich orange. 42". June-July. 50c.

H. Rajah. Deep English red with darker red veins. Garnet red eye-zone. 40". July-Aug. \$2.00.

H. Rosita. Near carmine-crimson with coppery red tone. 36". Part shade preferred. \$2.50.

H. Rosalind. Superior clon of H. fulva rosea, famous pink Daylily. A very delightful pastel shade of rosy pink. \$3.50.

H. Serenade. Rose-fulvous markings on apricot cream. Faintly overcast darker. 4 ft. June-July. \$2.00.

H. Sibyl. Dark purple-red petals, lighter sepals. \$3.00.

H. Soudan. Lemon yellow. Broad wavy petals and sepals. 3 ft. June-July. 50c.

H. Spitfire. Seems never to quit blooming in spring, summer and fall. Fiery red with yellow midrib, yellow throat. Small flowers but in great profusion. 2½ ft. \$1.50.

H. Vesta. Deep orange with glistening gold sheen. 30". May-July. \$1.00.

H. Vulcan. Dark maroon-red. 30". July-Aug. \$2.00.

H. Wau Bun. Large apricot flowers, sprinkled fulvous red. The twisted and curved petals add to its beauty. \$2.00.

Hymenocallis. Spider Lilies. The true Spider Lilies. Pure white with long narrow petals and long stamens, giving a fancied spidery appearance. **Culture.** They are hardy in the south and may be planted deep on the border-line as in N. Car., Okla., etc. They do exceptionally well in pots. In the north they can be grown in the garden, but they must be dug in the fall and stored over winter like Glads.

Hymenocallis sp. Tropical Spider Lily. This is a large species, with pure snow-white flowers over 7" wide. It is evergreen in frostless locations. It appears to be identical with *H. rotata* and *H. tenuiflora*. 50c ea.

Leucojum aestivum. Snow Flakes. Hardy in north. Blooms often before snow is gone. Dainty white flowers, each petal with a vivid green dot. Plant 4" to 6" deep. Do well in full sun, a little better in half shade. 3 for 25c. 75c per doz.

Lycoris are natives of Japan and China. A few of them are now scarce because none can be imported. Most of them are winter growers.

Culture. The species *Radiata* do well in any good garden soil containing humus. All *Lycoris* prefer neutral or mildly acid soil.

Lycoris radiata. Red Spider Lily. Coral red flowers in a several flowered umbel in Sept. Flowers are followed by the foliage. Flowers have narrow undulate petals and long stamens which give the "spidery" appearance. This is a common flower in the south and one of our most beautiful. Hardy along coast to North Carolina and on Pacific Coast to Vancouver. In pots it flowers only the first year. 35c ea.

Nerine. This genus is seldom seen in America, altho it is one of the most beautiful and varied of the Amaryllids. They bloom in succession from Aug. 1 thru Jan. They are hardy only in the south where temperatures seldom go under 26°. But they are one of the finest pot bulbs. **Culture:** Pot or plant in mildly acid to neutral soil. Sandy soils are more likely to be acid and drainage is better. Use peat or leaf mould to bring soil to pH 6.5 or 7. Alkaline soil is the most frequent cause of failure. Pot bulbs at once with bulb well covered and 2" to 4" deep in gardens. Full sun. When foliage yellows withhold water but be sure they have made a vigorous growth.

Nerine Bowdenii. 10 or more rose pink flowers in an umbel 9" wide on a 15" scape. The finest of all and of easy culture. Dec. delivery. \$1.00 and \$1.50 ea. Budded (usually in Dec.) \$2.00 ea.

N. filifolia. Lovely small Nerine with evergreen thread-like foliage. Carmine pink flowers on 12" stem. A dozen bulbs may go into a 6" pot. Bloom in Sept. Delivery, any time. 15c ea. \$1.50 doz. If ordered after Sept. 15, you may get no flowers the first year.

N. fothergilli. Has a large umbel of vivid red flowers in early fall. \$2.00 ea.

N. fothergilli hybrids. These are very much like their seed-parent, *N. fothergilli*, except that colors of the flowers range from pink, somewhat like *N. Bowdenii*, into salmon, orange and shades of red. No choice of color can be given as they are mixed. Like *N. fothergilli*, these should be kept dry during summer. They flower about Sept. \$2.00 ea.

N. massonorum. Earliest, often mid-July. Foliage like *N. filifolia*. Flowers resemble it but smaller, on a shorter scape. Very long spathe. Delivery any time. 35c ea.

N. rosea-crispa. Hybrid of *Filifolia* but larger in all parts. Can be kept evergreen or dried off. \$1.00 ea.

Sprekelia formosissima superba. The Orchid Amaryllis. Deep crimson flowers in orchid-like form. This variety is much larger than the common type, better color and more flowers. Unlike the type, this var. "superba" is evergreen. A desirable bulb for pots. Culture like Amaryllis. Largest, 75c ea. Large, 50c ea., postpaid. Special. This is a fine Amaryllid for landscape use in the south. In the middle south it can be planted 5" or 6" deep and is hardy with an added mulch. We can offer 25 bulbs for \$8.00. 50 for \$15.00 postpaid, 100 bulbs for \$20.00, by express, f.o.b. La Verne.

Tulbaghia violacea. Small cousin to Agapanthus. Mauve flowers produced thruout the year, a true ever-bloomer. Foliage has garlic odor if bruised. An acquisition for pot culture. 25c ea. 5 for \$1.00. \$2.00 per doz.

Zephyranthes. Fairy lilies. The smallest Amaryllid, 6" - 12" tall. Fine in beds or borders. Hardy in middle south. In north dig and store. They may be grown in pots. Give acid soil, sandy loam with leaf mould.

Zephyranthes candida. Often called white Crocus. Best pure white. Evergreen. Very easy. Flowers profusely giving a bed with a snow white coverlet from mid-summer to early winter. 3 for 25c. 75c doz.

The Alliae. This group is now placed in the Amaryllis family. Sandy loam is preferred. Do not add too much leaf mould and no peat, as very acid soil is not good. Plant about 2½" deep. The species Allium are onions and should be grown in full sun unless noted.

A. ampeloprasum. Spanish garlic. This was introduced by Burbank as "Elephant Garlic," because of its large size as a plant and bulb. We believed it to be a horticultural variety of *A. sativum* but Dr. Traub has recently identified it as here listed. The name is changed but the flavor remains for it is the largest, sweetest and juiciest garlic, easiest to peel and is a fine ornamental for the herb garden as it has a 30" flower spike. Price reduced. Bulbs 3 for 10c. 35c doz.

A. neopolitanum grandiflorum. Has a large umbel of pure white flowers that resemble Paper White Narcissus and are most lovely. The very small bulbs can be grown in the garden in the deep south and they are easily grown in pots for winter bloom in north. Plant about 6 bulbs in a 5" to 7" pot. 10c ea. 3 for 25c.

A. Schoenoprasum. True Chives. Lovely little plants with lavender flowers, used for edgings in the flower or herb garden and add zest to salads. 10c ea. 4 for 25c.

A. triquetrum. Very fine white flowering allium. The many large flowers in an umbel are pendulous. It does well in full sun like most alliums but even better in partial shade. 10c ea. 4 for 25c. 60c per doz.

A. tuberosum. Oriental Garlic. A pretty Allium with white flowers. An ornament in the garden, indispensable in the herb garden. Leaves give a most delicious flavor to salads without the long-lasting high-powered after-effect of garlic. In north, winter the plants in pots. Plants 25c each.

Brodiaea uniflora. Lovely porcelain blue flowers on a low plant. Usually grown in pots in the north but they are hardy in Ohio. For a pot of bright blue flowers in winter, to go along with Oxalis, plant 6 in a 4" pot. They must have a cool room. Culture, like freesias. 4 for 15c. 40c per doz. \$2.75 per 100. By express, f.o.b., \$2.25 per 100, \$20.00 per 1000. Var. *Alba*. We have a few of the white variety for 6c ea. 60c doz.

BULBS FOR CHRISTMAS PRESENTS

Give bulbs or orchids for Christmas, birthday, Mother's Day, Anniversary or any time a present is desired. They are ideal presents for flower lovers. It is much easier to order bulbs or orchids than to shop in the crowds. There is a saving too, because while books, magazine subscriptions, toilet accessories, jewelry and almost every gift item one can think of, has risen in cost, bulbs, cut flowers, orchids (both cut flowers and plants), are actually lower in price. Nothing gives more pleasure than flowers, bulbs or plants and they cost less. On top of these advantages, one can shop by mail with confidence and avoid the crowds.

IRIS FAMILY—Iridaceae

The *Iris* is the type genus of this family, which includes *Iris*, *Gladiolus*, *Watsonias*, *Freesias*, *Sparaxis*, *Tritonias*, *Babianas*, etc., listed on the following pages.

Tall Bearded Iris. These will be listed in our spring catalog which you will receive in Jan. We advise June or July planting up to early fall. But many growers advise fall planting. If planted in late fall one gets fewer flowers the following spring than if planted earlier. But we planted in mid-winter last year and much to our surprise we had a lot of flowers. It all depends on the amount of growth one can get on the plants and *Iris* grow all winter in So. Calif. It is always better to plant in the fall than to wait until the following year.

If you are interested in planting *Iris* this fall or winter send us 10c for our Spring Catalog. The 10c is necessary because we have only a few hundred and must limit distribution to those who want to buy. Also ask for our special price list of the higher priced newer introductions, entitled "The Iris Four Hundred." Please do not send for either list if you do not intend to buy.

Dutch Iris. These are bulbous *Iris*. The flowers are not fragile like bearded *Iris* and they are therefore very useful for cutting.

Culture. They should be planted in the fall before Oct. 30 as the bulbs often deteriorate after that date. Later plantings may succeed if bulbs are good and not infested with plant lice. Plant 1" to 3" apart and 3" to 4" deep depending on size of bulbs. They are hardy in milder sections of north but a mulch is advisable. Full sun or slight shade.

Blue Horizon. Very beautiful flower, broad and sturdy. Light violet blue standards and soft sky blue falls. 27" tall. 3 for 25c 85c doz.

Imperator. Tall, dark blue. Favorite for cutting. 3 for 20c. Per doz. 70c.

Jacob de Wit. A very early dark blue. 3 for 25c. 85c doz.

Wedgewood. A most lovely Wedgewood blue. The earliest to flower. Popular florists flower. In the north it needs protection of a winter mulch. It will force in pots. 3 for 25c. 85c per doz.

Yellow Queen. Pure deep golden yellow. 3 for 20c. 75c doz.

Assorted varieties. The above and other sorts. 3 for 25c. 85c per doz.

Iris Spuria should be planted in the fall in full sun or part shade. Set the rhizome shallow as for bearded *Iris* and keep moist until they are established. Altho they do well under average garden conditions they do best with abundant moisture.

I. spuria aurea. Deep yellow. 50c.

I. spuria ochroleuca. 4 ft. White with yellow blotch on falls. Excellent cut flower. 35c.

Gladiolus

How to Grow Gladiolus. Glads planted Nov. 15 to Mar. 1 in Southern California and thruout the south (a little later in Northern California and early as possible in spring in the east) are reasonably sure to escape the attack of thrips. Our Glad bulbs are especially grown for this purpose, matured early and dug in August. But if you plant recently dug bulbs you will gain nothing; they will continue their rest of three months before starting.

Thrips are very small insects that suck the juices from the plant. They cause the flowers to wither or appear burned, and appear only after weather becomes warm. To avoid the damage thrips do, four measures are effective. Plant early. Plant clean, treated bulbs. Keep them reasonably moist and well cultivated, with no weeds.

The total elimination of thrips appears impossible. A few are bound to appear as the weather becomes warm.

We therefore begin to dust with D.D.T. when plants are about 8" tall. Any hand duster will do. We use a powder containing 5% D.D.T., 45% Sulphur and 50% inert ingredients. Dust in early morning when the plants are moist with dew. That will cause the powder to stick and remain effective for a week or two. Four to six dustings before

flowering will control thrips tho in a field where various sizes have been planted and where flowering lasts for several weeks we consider it advisable to dust again once or more, the next morning after flowers are cut. We have not seen flowers or buds damaged by D.D.T. This powder can be had most anywhere under any one of several trade names.

Treating Bulbs. We have recommended various dips and treatments for bulbs but have rejected all when we later found that some injuries resulted to the bulbs. Now we dust our bulbs with the same D.D.T. powder. It keeps aphis and mealy bugs away and kills the thrips.

Naphthalein flakes sprinkled in the bulb containers which are then covered and allowed to remain about three weeks, will usually kill all thrips. But too long an exposure results in a little damage to the bulbs.

The Lysol treatment kills thrips and their eggs. It also is useful in controlling the various bacterial and fungus diseases that attack the bulbs. Mix 4 teaspoonfuls Lysol to each gallon of water. Soak the bulbs in this not over 5 hours. Do this just before planting and plant in moist soil. Unfavorable results have been reported from soaking too long or by planting in dry soil and thus prolonging the action of the Lysol. Some growers do not recommend this treatment.

The bulbs we sell you have been treated with D.D.T. Plant large bulbs 4" or 5" deep; small 3"; bulblets 2". Twice their diameter apart. One can plant two rows, staggered in a 4" wide furrow or closer in a single row. Rows about 20" apart. Alkaline soils produce poor Glads. Soil should be neutral to mildly acid. Leaf mould or peat added is useful. Domestic peat is often harmful because alkaline. Use no fresh manure, but well rotted manure is good. Top mulch of leaf mould or imported peat is good.

Keep Glads growing with plenty of water and best culture for about two months after flowering. It is best to dig bulbs in the south, and necessary in the north.

Sizes and Prices. L. means "large," size 1 and 2, 1 $\frac{1}{4}$ " - 1 $\frac{1}{2}$ " (or more) in diameter. M. is "medium" and includes No. 3 and 4 sizes, $\frac{3}{4}$ " to 1 $\frac{1}{4}$ " diam. S. means "small," under $\frac{3}{4}$ " diam. Large and medium bulbs give good long spikes. Small bulbs usually bloom in most varieties and when planted early, given good culture and plenty of water they usually make fairly long spikes. Early planted bulblets often flower. Large bulbs bloom earlier and throw more and longer spikes. Prices are for one bulb as elsewhere in this catalog. A dozen, all of one sort, costs ten times the price of one unless otherwise stated. Six are sold at dozen rate. Don't forget Sales Tax in California.

Substitution. If you order early there is likely to be no substitution, but when out of a variety we send another as nearly like it as possible and of equal or greater value. If you do not approve this, request no substitution.

We are offering many of the newer and better varieties that have been increased to a quantity where they can be sold at medium prices. A few of the older ones, still desirable, are retained.

April. Beautiful pastel tone of Apricot. Tall, vigorous, early. L. \$1.50 ea.

Big Top. Light pink with carmine feather. 6 ft. tall. The gorgeous, immense flowers and height give great distinction. L. 20c ea.

Blue Beauty. The best of all blue glads, we think. Large and tall. L. 7c ea. M. 5c.

Burma. New ruffled, deep rose red. Sensational new glad. L. 30c ea.

Butterscotch. Tall orange yellow. This is a new color break and a delightful one. In the last So. Calif. Gladiolus show this new origination won Best Seedling, Best Spike, Sweepstakes. So impressed was I, as one of the Judges, that I asked if there was some other award we could give. So we put on a Special Award of Merit. Price, M. \$1.00 ea.

Capeheart. Light salmon rose. Large fls., 8 open. Early commercial cut flower and exhibition. L. 8c ea. 75c doz.

Charles Dickens. Tall, large flowered, radiant purple. Our stock contains a few rogues but all good ones. As is. L. 6c ea. 60c doz.

Corona. Cream, edged pink. Many consider it the most beautiful. L. 10c ea.

Elizabeth The Queen. Gorgeous, immense, ruffled lavender flowers. Best. 20c ea. \$1.75 doz.

Ethel Cave Cole. Tall, early, large flowers, many open. This exquisite pink is probably the world's best and in greatest demand by florists. L. 8c ea. 75c doz. \$5.00 per 100. M. 6c ea. S. 4c. The smallest bulbs will flower well if planted early.

Margaret Beaton. Large white, with scarlet throat blotch. Popular as a florist's flower. L. 6c. M. 5c. 45c doz. S. 30c doz. Small bulbs bloom well.

Pacifica. Tall, early white, popular for cutting. L. 10c ea.

Red Charm. Finest new red. Tall. Many flowers open. L. 25c.

Red Unknown. Fine vivid color, tall spikes and very early. The label was lost but it is so good and sells so well as a cut flower that we continued to propagate it. Because unnamed we price it low. L. 8c ea. 75c doz.

Rosa Van Lima. Tall rose pink. Very beautiful. L. 10c ea.

The Orchid. The small lacinated flowers resemble orchids in color and form and florets make a nice corsage. 1" bulbs 6c. Small but blooming size 35c doz.

Wanda. Fine cream sport of Picardy. L. 10c. M. 8c. S. 5c.

Mixed Varieties. Not a balanced mixture but a mixture of excellent varieties. 5c ea. 50c doz. \$3.00 per 100. Small to medium, blooming size, \$1.50 per 100.

Please remember that the rate per dozen is ten times the price of one bulb.

Bulblets. If bulblets are peeled carefully without bruising, planted early, kept moist until they come up and given good culture thereafter which includes plenty of irrigation, many will flower the first year. A large proportion will make large or medium sized high crowned bulbs. They do quite well without peeling. The following list are not common, ordinary varieties that can be sold for little-or-nothing per pint. We would not sell them if we had land enough to plant all as these are top-notch varieties.

The varieties offered are Ethel Cave Cole, Capeheart, Wanda, Charles Dickens (mixed with Capeheart, etc.), Margaret Beaton and Assorted. Price per pint, \$1.00. Red Unknown, per half pint, \$1.00. We are able to rogue the large bulbs but bulblets and small bulbs have not all flowered and may contain a few rogues. We have adjusted this on the bulblets by pricing them at one-half of last year's price.

Gladiolus nanus, Baby Glads. These small, exquisite Glads are suitable for growing in pots in the north as they range in height from 1' to 2'. They must be planted in the fall as bulbs do not keep until spring. In the south they may be grown in the outside garden and are a little hardier than Freesias. They are winter growers and do not do well in warm weather.

Mrs. Foster's Purple. This is possibly a species, but is one of the best we grow. Its vivid color makes it most desirable for cutting. 50c per bulb.

Charm. A fine, rosy lavender. 20c ea.

Assorted colors, pink and red tones. 10c ea.

Watsonias

Close relative of the Gladiolus but winter growing and earlier in bloom. They grow as tall or taller. The flowers are smaller but in very lovely spikes useful for cutting. The colors are varied, in most pleasing pastel tones, and bloom early if planted early. Better even the second and third years. Easy to have them for Decoration Day or before in Southern California. In most cases we have discarded names and substituted the name of their color.

Culture: About the same as Glads. In the south they must be planted in early fall (Sept. best) as the bulbs sprout early. Hardy at Washington, D. C., and probably in all climates where temperatures do not go below zero, if planted in a well protected place, 4" deep and well mulched. On the border line of their hardiness, as in Virginia, they have been grown and flowered in an unheated cloth house and survived outside temperatures of slightly under zero. They must be grown very cool in greenhouses.

Burbank's Lavender. Large lilac flowers. 10c ea. 75c doz., postpaid. Wholesale \$3.50/100, f.o.b.

Clementia. Spinel pink. 15c ea.

Clunes. Large, lovely flowers of white, tinged lavender pink which is deeper in center. 25c ea. \$2.25 doz.

Dazzler. Dazzling scarlet flowers, profuse in spring and a few thruout the year. Evergreen, if allowed but does not die if dried off. 25c ea.

Giant Lavender. This is a purple, not lavender as named. It is a giant in size of flower and entire plant. Probably our best for cutting. 25c ea. \$2.25 doz. \$15.00 per 100, f.o.b.

Lillian Benner. A fine rose purple, valuable for cutting. 10c ea. \$1.00 doz. \$5.00/100, f.o.b.

Malvern. A deeper pink than Clunes. A fine cut flower. 15c ea. \$1.50 doz. \$8.00/100.

Marginata. An unusual species with small flowers all around the stem. The thin, wiry stems are very long. Should be vastly more popular. 15c ea. \$1.50 doz.

McCoy's Florists White. We have this thru the courtesy of Frank J. McCoy. The flowers are a creamy white, very useful as cut flowers. Small plant and bulbs 15c ea. \$1.00 doz.

Mrs. Bullard's White. Pure white. A favorite with florists. 10c ea. 75c doz. \$3.50/100, f.o.b.

Rosolane Purple. A fine purple for cutting. 10c ea. 75c doz. \$3.50/100, f.o.b.

Assorted Colors. The colors listed and many others. 10c ea. 75c doz. Wholesale, \$3.50/100, f.o.b.

Wholesale. The 100 rates quoted above are low wholesale prices—lower than any other grower's. They are even too close to the cost of digging, cleaning and packing as this is a difficult, time-using job. But we offer 1000 bulbs, our selection of assorted and named varieties, labelled, for \$30.00 per 1000. These will be field run blooming sizes and as many varieties included as are available when shipped. By express, f.o.b.

How to Grow Freesias, Sparaxis, Ixias and Babianas. This closely related group of bulbs have similar culture requirements. We could also include their close relative, Gladiolus nanus, here. All are hardy only in the south where winter temperatures go no lower than about 26°. At about that temperature some injury results but bulbs survive. They mature if even several degrees colder. Where temperatures are about 10° colder they may be grown in cold frames, cloth house or unheated houses.

In the north, all are fine bulbs for pots in a cool room in the house or greenhouse. As they are naturally winter growers, they must have cool conditions and they do not flower well when forced at a temperature range of much above 40° to 60°.

They should be grown in flats 4" deep or in bulb pots or pans. A friable sandy loam with much leaf mould added is the best soil. If part of the humus is from composted, well rotted manure, better flowers result. Plant 6 to 8 bulbs in a 5" to 7" pot and cover lightly.

In the outside garden, bulbs may be planted 2" to 3" deep and 10 to 20 to the foot, according to size. Give full sun exposure. Plant or pot early. Sept. and Oct. are best months. Good results follow Nov. planting and Dec. planted bulbs usually flower well but stems are shorter and flowers are usually a little smaller. We supply the largest bulbs we can grow or buy as they give stronger plants, larger and better flowers and are more sure to give maximum results than small bulbs.

Freesias are the most deliciously fragrant flowers one can grow. The fragrance is not too heavy and is not cloying in the house or outside. The first four in this list are the new Tecolote Giants. They are much taller and flowers equal the size of Baby Glads. Freesias are very easy in pots and are most desirable for both beauty and fragrance.

Tecolote White. Gorgeous, pure white Freesia. Deliciously fragrant. A giant in size. Large bulbs 15c ea. \$1.50 doz.

Talisman (Tecolote). Bright orange pink with cream throat. Like color of a Talisman rose. Large bulbs, 10c ea. \$1.00 per doz.

Tecolote Red. Large, 10c ea. \$1.00 doz.

Tecolote Blue. Large, 10c ea. \$1.00 doz.

Golden Daffodil. Large bulbs. Deep golden daffodil yellow. Richly fragrant. Easy to force in pots in any size over $\frac{1}{2}$ " but our larger bulbs are easier and better than the cheaper $\frac{1}{2}$ " bulbs. The $\frac{3}{8}$ " bulbs are sold at low prices but they will not force. 2 for 15c. 65c doz. \$5.00 per 100.

Sparaxis are closely related to Freesias, but are far more colorful. The colors range thru vivid tones of bright red, crimson, carmine, pink, apricot and sometimes an almost white one. A few reds are almost maroon. There is usually a contrasting color in throat. They are a little taller than Freesias and the flowers are larger, more flat and wide open. For pots, or winter flowers, few plants will create as much bright color as Sparaxis.

Houdyshel Hybrid Sparaxis. We have grown and selected seedlings from the original Dutch varieties and now have a much more colorful strain. The colors mentioned above are descriptive of this strain and we can add that occasionally one finds colors approaching yellow, or blue. 2 for 15c. 65c doz.

Small bulbs bloom well in the garden and even in pots they usually flower. Price 35c doz.

Tritonias are also close to Freesias but taller. **Culture** like Freesias and Sparaxis.

Tritonia lineata. This interesting species grows 18" tall. The flowers are white, crossed with grey lines, hence "lineata." 3 for 15c. 50c doz.

Ixias are 2 to 3 ft. tall. They have slender, wiry stems and are nice for cutting. The flowers close at night and on dark days but the long closed buds look like pink striped, oblong pieces of bright colored candy and sometimes I think they are prettier than the open flowers.

Ixias, assorted colors, 2 for 15c. 50c doz.

Babianas. Blue flowers for the winter window garden are hard to find. Babianas are the answer. They are a vivid, intense blue to blue violet. **Culture** exactly like Freesias, Tritonias, Sparaxis and Ixias in pots or garden except they should be planted about twice as many in a pot or given space. Though the bulbs are small, they like to be planted about 3" deep in the garden and 2" in the pot.

Babiana hybrids. 3 for 15c. 50c doz.

Marica gracilis. Walking Iris or Apostle Plant. The fugitive 2" flowers, white and blue with yellow and brown markings in center, are lovely. The flowers are followed by a small plant at end of leaf-like scape. These become heavy and bend over to ground and take root, thus walking away from mother plant. **Culture:** give nearly full shade, plenty of water, never drying out. Tender tropical but grown in pots in north. 50c ea.

Moraea polystachia. African representative of the Irises. 2 ft. stems, covered by a multitude of flowers, mauve and violet with yellow in throat. Blooms profusely in the winter in Calif., beginning 6 weeks after planting or in pots in the north. **Culture** like freesias. 2 for 15c. 50c doz.

LILY FAMILY—Liliaceae

The type species is *Lilium*, or true Lily. Many call Crinums, Callas, Cannas or any bulbs "Lilies," but this is an error.

Lilium. This genus includes all true Lilies. **Culture.** It is better to plant all true Lilies in the fall altho one can plant the stem rooting sorts in the spring but with results not quite as satisfactory. *Regale* and *Maxwill* are stem rooting and should be planted 6" to 12" deep. *Pardalinum* makes roots from the base of its bulb only and should be planted only about 4" deep to top of bulb. These lilies will all be hardy in milder northern states but a good mulch helps them in all climates and in all seasons. They need a mildly acid soil. A great deal of humus, as leaf mould or peat, should be mixed with soil. Lilies must have their feet cool and their heads warm. Therefore planted among low shrubs or plants where tops are in the sun is ideal. They do very well in the half shade of trees or a lath house.

Lilium Maxwill. Cross between Willmottiae and Maximowiczii. It has the lovely flowers of Willmottiae, orange yellow with recurring petals and black dots scattered over them. The Maximowiczii bequeathed tall stems, many flowers and hardy thrifty growth. It is a sturdy lily that will do extremely well in ordinary garden culture. Sizes at 50c and 75c ea.

L. pardalinum. California native and very easy to grow. Many deep orange flowers, shading to red at tips. Needs partial shade, moist but well drained soil. Plant 4" deep. Blooms June, July. Hardy. 25c ea. Largest bulbs 35c. \$2.50 and \$3.50 per doz.

L. regale, Improved type. These are so much better than we are not listing the common, unimproved type this year. This improved regale has less of the pink and orchid tones on petals and is thus more white. This is one of the hardiest and best garden lilies. We are reducing prices on this improved type almost to level of the common sort. Prices 30c, 40c and 50c.

L. longiflorum, var. Croft Easter Lily. This is the best lily for forcing in pots.

How to Force Easter Lilies. Follow our "Potting Directions" on a former page. Soil two-thirds sandy loam, one-third well rotted compost, leaf mould or peat rubbed thru a $\frac{1}{8}$ " mesh screen and a little well rotted and screened manure. Fill pots half full and set bulbs in the center, as soon as you receive them. A half inch thickness of sand in contact with bulbs is best as there is some hazard if compost or manure touches bulb. Many lay bulbs slightly on side so that water does not accumulate within scales of bulb.

When planted, place pots in a cool situation, temperature above 34° but not over 40°. This may be in a cold frame or a box outside or inside or under a large tree. The cool temperature is necessary. Pack the pots in sphagnum, straw or sand to hold the moisture and leave them until roots are abundant. Do not force any bulb until pots are well filled with roots. When brought into the house, the night temperature should be 45° to 50° and only a little higher in the day for 7 to 10 days. When top growth shows, give 60° at night, 70° in day time. It requires about 13 weeks at this temperature until flowers open. Longer time must be allowed if dark or cloudy weather is expected. Longer days or more sun in south will shorten slightly this interval. To retard or hasten bloom raise or lower temperature but do not raise to over 70° and do not alternate retarding and advancing.

Do not give potted lilies strong sunshine. Shade greenhouse glass lightly or use muslin curtain in house. Syringe foliage with water at 70° on bright mornings but never in the evening or on cloudy days. Give good ventilation. With a little experience one can have flowers for Easter or any desired date in spring. Amateurs usually are successful from the first but one can be more sure if several bulbs are potted.

Croft Easter Lily. It makes a shorter stem and a more spreading flower head and is thus more attractive in pots than most lilies. A pure white lily for Easter is a tradition we should cherish. It belongs in our home, on altars, in churches on that date. They should be given as presents then to friends and loved ones. The following prices are for smaller flowering bulbs up to the largest size. The larger bulbs force more easily and give many more flowers. The delivery date is late fall as soon as bulbs mature and are ready to be moved. Prices, 35c, 45c, 60c and 75c ea. The smaller size will need a 5" or 6" pot, the larger up to 8" or even larger. These do well in mild climates in the garden, blooming June to July.

Roman Hyacinths. Have single flowers, usually, and a less dense raceme than the Dutch Hyacinths but they have equal fragrance and great beauty in the garden or in pots. Culture, the same as for Dutch Hyacinths as noted below, either in gardens or pots. Our bulbs are nearly all white but a few are blue and now and then you may get a pink one. We can only call them **Assorted**, 25c ea.

Dutch Hyacinths are loved by every one and have been for more than a thousand years. Their exquisite beauty, rare fragrance and easy culture contribute equally to this result.

Culture. Hyacinths are winter hardy but in cold climates a good mulch is advisable. Plant 3" or 4" deep in rich sandy loam containing much humus. For **forcing in pots** use a 4" or 5" size. Use clean light sandy soil but no humus or fertilizer. Read our general potting directions. Set the bulb under soil with top just showing. Plunge the pots outside in a cool shady place as recommended for lilies or daffodils. Cover tops of pots with 2" of soil and mulch with straw or leaves. Control the moisture so that they are always moist but never very wet. Drainage under the pots must be good. In about 6 weeks (or longer if necessary) they should be well rooted. They may then be brought into the house to a temperature about the same as for Easter Lilies. In all stages of growth they should be moist but if excessive there is danger of causing the bulbs to rot.

Our bulbs average 16/17 cm., a few may be 15 and some are at least 20 cm. We offer three colors, Red, Pink and White. If desired we will label with name of variety as well as color. Price 40c ea. \$4.00 doz. Assorted varieties, \$3.60 doz.

Muscari, Grape Hyacinths, var. Heavenly Blue. Racemes of closely packed, exquisite, tiny blue bells. Fine in pots or garden. Our bulbs are fine and large this year. L. 2 for 15c. 50c doz. Per 100, \$3.50. Blooming size, 35c doz., \$2.25/100.

Scillas are closely related to Hyacinths. All are hardy except *S. peruviana*.

Scilla hispanica. Assorted colors and sizes. Plant in shade. 50c doz.

S. hispanica, var. Excelsior. Giant, dark blue. The best, 25c ea. 6 for \$1.25.

S. hyacinthoides. Winter hardy in north. The densely fld. raceme of deep blue is often 3 ft. in height. Flowers are useful in arrangements and sell well to florists. Plant in full sun. L. 20c, M. 15c. Small bulbs, 75c doz. postpaid or \$2.00 per 100, f.o.b.

S. peruviana. A fine blue flower for pots in the north or for southern gardens. The flower scape is short but above the foliage. The flower head is a compact, conical, wide raceme, ideal in a potted bulb. L. 30c, M. 20c.

S. peruviana. Houdyshel Hybrids. Altho so little appreciated and grown, we think so much of this *Scilla* that we started growing seedlings and selecting for quality and unusual colors a long time ago. Unexpected results followed, such as prettier foliage, unusual colors such as yellow, tan and pink markings. I will advise you to grow the species listed above in a pot this winter and now or later our strain. These bulbs are assorted. Do not express a color preference. 50c ea.

Ornithogalum arabicum. Very showy. The round glossy black ovary in the center of the flower is in striking contrast to the pure white flower. This is hardy only in the south but if the largest bulbs are potted early and handled about the same as lilies they usually bloom about Easter. L. 20c. \$1.50 per doz. M. 10c ea. 50c per doz.

Lachenalias furnish bright, cheerful flowers often by Dec. 25 if planted by Oct. Reasonably sure for Jan. bloom. Small bulbs and plants with one or two leaves, themselves decorative, with a 6" to 12" flower scape that carries 12 to 24 tubular flowers, 1" long. **Culture.** Very tender and hardy only in deep south with a minimum temperature of 24°. They are very easy to force in pots and require a cool room, full sun. Plant several in a 4" pot.

Lachenalia assorted varieties and sizes, 15c ea. 6 for 75c.

Veltheimia viridifolia. This is one of the most beautiful plants one can grow in a pot. The glossy vivid green leaves are wavy margined and form a perfect rosette much like a bird's nest fern. From the center arises a scape with tubular, drooping flowers closely spaced. The color is a deep rosy or purplish pink of an ineffable tone not found in any other flower. It begins to bloom, if planted early, in So. Calif. gardens or other equally mild climates or in pots in the north by Dec. 15 and continues for nearly 3 months as larger bulbs (which are much more economical) send up 2 to several spikes. **Culture** is very easy. Use a sandy or sandy loam soil to which is added fine screened peat or leaf mould about one-third or fourth. Some charcoal is good. Read general potting directions again. Order before Oct. 1 if possible as foliage starts in storage, but we can

ship these until Jan. 1. Blooming size 50c. Large \$1.00. Extra jumbos will give you more flowers and for a longer time in proportion to cost. Price \$1.50 and \$2.00.

Tulips. We positively do not have tulips to offer this year. Please do not inquire as we can only repeat this.

OXALIS FAMILY—Oxalidaceae

There are two types, the winter and the summer growing. The summer growing species are listed in our spring catalogs. The following are all winter growers. These are brightest and most vivid of winter flowers for a sunny window or in the garden in the south. They give a profusion of bloom over several months period. A bed looks like a carpet of solid pink, rose, white, yellow, etc. The flowers are large, some over 1" diam.

Culture. Plant about 2" deep, 3" apart. Large bulbs may be farther apart and a little deeper. In pots, the smaller may go 6 in a 4" pot. Use good rich soil, altho they will grow in any soil. Give full sun exposure as they open only in full light and close at night. Order and plant early as they begin to sprout even in August. But they may be shipped even with long sprouts up to mid-October.

Oxalis Bowiei. A large plant with bright rose red flowers. 3 bulbs to a 5" pot. 5c ea. 50c doz. \$3.75 per 100. Largest size 10c ea.

O. cernua. Bermuda Buttercup. Deep golden yellow flowers. Very profuse. 5c ea. 50c doz. \$3.50 per 100.

O. Grand Duchess. Low growing plants, but give a profusion of very large flowers in three colors. The Pink, Lavender and White, 5c ea. 45c doz. \$3.00 per 100. Largest size 10c ea.

O. Hirta. One of the finest winter Oxalis, and most unusual as it makes a leafy stem that to some extent falls over and will trail down the sides of a pot. Nice for hanging baskets. The flowers are deep rosy red. Contrary to most Oxalis species, Hirta does better and blooms better in part shade. Even in our bulb trays, the smallest bulbs bloom from the dry soilless bulbs in the deep shade of our storage sheds. The fact that flowers open on dull, winter days makes it a "must have." 5c ea. 50c doz. \$3.00 per 100.

Oxalis crassipes. Flowers bright rose. Evergreen and everblooming. Increases by tubers and can be moved at any time. Plant at once. Large tubers, 25c ea. 6 for \$1.00.

Oxalis Special. The bulbs offered in this lot are assorted in size and color. They will all flower well. Some are accidentally mixed, others are surplus. Price 30 for \$1.00.

THE CALLA LILY FAMILY—Araceae

This family contains the so-called Calla Lilies or Zantedeschia, Black Callas and other Aroids.

Culture. All Zantedeschias and Arum palaestinum are suitable for pot culture. A. palaestinum will start about September or later. Do not put this bulb into moist soil before that or it will rot. Zantedeschias—pink, yellow and spotted leaf—may be potted by about Dec. 15. Don't rush them, as too much water before they start to grow may rot them. They may be held back and started in early spring, here in late February. All do well in the garden in a moist semi-shaded cool place. They are not hardy in cold climates; dig in fall. The White Calla usually blooms in California in the garden in late winter. They may be planted in early fall in pots or garden. All do best in mildly acid soils, on sandy side.

It is an error to keep large White Callas growing continuously. If rested thru summer you will be rewarded with flowers. A rest brings flowers when they start again, often twice or more in a year. The Baby Calla should not be allowed to lose its foliage. Callas as pot plants need some sun, enough to prevent spindly growth, plenty of light and like all plants, good ventilation. They need abundant water but good drainage.

Zantedeschia aethiopica, var. **Baby Calla**. This is the smallest and whitest Calla. Small enough for corsage. We send small bulbs as the large bulbs make larger flowers, approaching in size those of Godfrey. For tiny 1" flowers replant your small bulbs. 25c ea. \$2.50 doz. This is less than present wholesale price.

Z. aethiopica, var. **Godfrey Calla**. This is the medium sized White Calla Lily. Grows to a height of 2 or 3 ft. It is much more suitable for growing in pots than the large type and the flowers are sufficiently large. They also bloom more freely. These are easy in pots, 7" in diam. They should be potted or planted in the garden as early as possible for winter bloom, tho they can usually be held back until mid-winter. Plant with bulbs covered by an inch or so of soil, in a good rich sandy soil with humus added. Blooming sizes at 20c and 35c. Largest bulbs for 50c ea.

Z. albo-maculata. **Spotted-leaf calla**. The prettiest foliage of all and worth growing for that alone. Endures sun best. Flowers, creamy white with dark throat. 25c and 40c ea.

Z. elliotiana. Pure golden yellow flowers. Requires more shade than others, but give potted bulbs part sun. 20c ea. 6 for \$1.00. Larger bulbs 25c and 35c ea.

Z. rehmanni. Dark rose pink variety. 50c.

Z. rehmanni, var. **elegans**. This variety has light pink flowers of a lovely shade. It is taller, larger and a better grower than the dark pink. More easy also to force in pots, but when forced many report they produce white flowers. Even in the garden some flowers are white with shell pink tintings. But the white ones are still lovely, more so than the white Aethiopica. 50c ea.

Arum palaestinum. **Black Calla or Solomon's Lily**. Foliage and flower like callas. Really black. Plant 4" deep and not before September 1. If not kept perfectly dry until that time the bulbs rot. Flowers in February in pots or in the garden in the south. No bad odor. Best in half shade. Sizes 50c, 75c and \$1.00.

A. italicum. Has attractive green leaves. The flower spathe is long, inflated, ivory white. No "perfume." 50c ea.

Dracunculus vulgaris. Rich tropical foliage and huge black purple flowers. Carrion odor. Hardy if planted deeper than frost penetration. Jumbo bulbs, \$1.00 to \$1.50 ea.

See Spring Catalog for other Aroids.

GESNERIA FAMILY—Gesneriaceae

This family includes Gloxinias, Achimines, Saintpaulias and others. Those mentioned are very popular as house plants and are really priceless possessions when once one has grown them.

Saintpaulias or African Violets. There has been a great increase recently in their popularity. Now everyone must have a few plants in their window garden. They bloom profusely and continuously when well established, if happy. Apparently many amateur gardeners could make them grow but could not make them happy enough to flower.

How to Grow Saintpaulias. One can make any plant thrive by simulating the climate and other conditions of their habitat. Saintpaulias come from the Usambara district of Tanganyika, equatorial east Africa. From this comes the name, Usambara Violet, as applied to the species, *S. ionantha*.

Tanganyika has in the north the famous Lake Victoria, source of the Nile. There are many other smaller lakes. It extends from the equator to about 12° south. Here there can be only one season, summer. The only variation likely to occur is when one goes from a low to a higher altitude. Changing winds might produce wet or dry seasons but a study of the flora, Saintpaulias especially, does not indicate a dry season. Winds from the Indian Ocean bring much humidity and a high temperature. The mean average along the coast is 80°. In some of the higher elevations, it is quite cold. The Usambara hills is one of two highland areas that permit European habitation. That would mean a lower mean temperature. I assume this because a temperature of 80° the year around

is too "mean" for the white races. European races wear clothing, varying in weight according to the season, to preserve a favorable temperature, rather than for reasons of modesty, at least in the beginning. In the low elevations in the tropics they do not. They are mostly "clothed in perspiration" and that cools them somewhat altho evaporation is slow because of the high humidity.

There are points of similarity between Saintpaulias and men. Neither like sudden changes of temperature. Saintpaulias need an even temperature with only about 10° variation. They do not like strong currents of air but should have good ventilation. The leaves are hairy and collect moisture. Perhaps that may be analogous to perspiration, but most amateur growers fear to spray or syringe the foliage on account of spotting the foliage. The foliage should be sprayed or syringed about once a week and if the water is the same temperature as the room no spotting results. If it is even 10° cooler spotted foliage results. It is better therefore to spray, or water Saintpaulias in the morning, never in the evening.

Saintpaulias need shade with no direct sun. A night temperature of 60°, the year around, is favorable to constant bloom. The day temperature should be only about 12° higher. That presents a difficulty in small greenhouses in So. Calif. so we set ours on the cement floor, which is kept wet. Solar heat near the glass becomes nearly 100° but on the benches, where we are growing Cattleya orchids the temperature is only about 80° as we frequently spray the foliage of the orchids. The foliage may become a little lighter in color but we have found no damage results.

Plants kept at 60° to 75° have flowered continuously for several years.

Probably all successful growers agree on the factors so far presented. The temperature and shade requirements are rather simple and easily complied with, but they are necessary conditions of growth. On many other factors there is much variation in the culture directions sent out by growers and in books and articles. From this we assume that Saintpaulias are tolerant to considerable variation in the type of soil and the amount of water given. One grower advises growing on the dry side. Another stands the pots in a saucer of water, giving a constant supply. The latter appears to be more favorable to me. We use a very friable sandy loam soil as it permits drainage. To this we add considerable humus such as leaf mould, peat and sphagnum.

Saintpaulias may be propagated from seed or from leaf cuttings. Seedlings are not likely to be of outstanding quality unless cross pollinated from high quality parents. The method is described in Miss Wilson's book, *The African Violet*. Propagation by leaves may be effected by leaving about 2" of the leaf petiole with the leaf. The petiole is inserted in the sandy moist soil and not allowed to dry out. Some sorts are very easy to propagate by this method while others are more difficult. A glass cover over the propagating pot or box will help. Our plastic pots are excellent for growing seed or cuttings of Saintpaulias, Gloxinias, etc.

The New Look for Saintpaulias

The daintiest of flowering plants deserves a dainty setting. One can scarcely add to their beauty but one can avoid detracting from it. We have therefore established a portion of our plants in beautiful, colored plastic pots. These pots are as useful in simplifying the culture as they are attractive in appearance as around the bottom and firmly attached to the pot is a cup nearly 1" deep to hold water. Between the soil and the pot we place a layer of sphagnum which acts as a wick to draw the moisture up.

In the following price list two prices are given. The lower price is for plants out of the pot. The higher price is for plants established in the plastic pots.

The African Violet, by Helen Van Pelt Wilson, is a book of great interest and value. It contains much more culture information than can be given here. Most varieties are named and described. It is a useful as well as a charming book. We will mail the book postpaid for \$2.50.

Saintpaulia Bargain. We have **Blue Boy** and **Pink Beauty** in 4" pots. The pots are filled and they should be shifted to 5" pots or may be divided into 12 or 16 divisions for small pots. They are full of bloom and buds. If you order 12 to 15 of our smaller plastic pots and establish them in those yourself, you will have plants worth several times their cost. Each plant will make a lovely gift for a friend. Since **Pink Beauty** is patented you must send us 3c each for all the labels wanted. Price, by express f.o.b., \$1.00 ea. These will be shipped in the clay pots. If you want them shipped out of the clay pots, we will mail them, postpaid, for \$1.30 ea. If you intend to divide the plants there is no disadvantage in shipping out of pots. These plants are full of bloom and buds, healthy in every way. There is no "catch" in this offer. Because a wholesale grower found he had too large a stock in the quiet summer season we bought a fine bargain and pass it on to our customers at less than the usual fair profit. But our stock is limited to a few hundred pots and we can't get more at this price. Therefore order early.

Saintpaulia list. In the following list, the name of the variety usually describes its color. If necessary, additional color description follows the name. **Amethyst**, blue-lavender. **Blue Boy**. **Blushing Maiden**, blushed white. **Dainty Maid**, silvery pink. **Mary Wac**, violet-red, the nearest to red Saintpaulia, **Mentor Boy**, violet-purple. **Pink Beauty**, true pink. **Purple Prince**, rich purple. **Sapphire**, light blue-violet. **White Lady**. Prices: Plants out of pots, \$1.00 each. The ten varieties for \$9.00. No other quantity discount. With the **New Look**, established in 3½" plastic, self-watering pots, and a larger amount of soil (to pay postage on), \$1.50 ea. The ten varieties for \$14.00. Established in 4½" plastic, self-watering pots. These plants are larger, but they still have pot room for a few months future growth. Price \$2.50 ea. The ten varieties, postpaid, \$23.50. By express, f.o.b. (safer and necessary for midwinter) \$20.00.

Plastic self-watering pots. 3½", 50c ea. \$5.00 doz. 4½" size, 75c ea. \$7.50 doz.

Remember, all prices include free parcel post delivery unless otherwise noted. We guarantee the plants to arrive in a growing condition. As the leaf petioles are very brittle, a few may be broken but these are soon replaced. Nature made these petioles brittle as this is one way they propagate.

Gloxinias

Close relatives of Saintpaulias. They are not dainty but they are gorgeous. We had never expected to be able to offer these bulbs for fall delivery but now we have found a grower who has a favorable climate and has the ability, maybe genius, to grow them to maturity and deliver them to me in early Nov. I should be able to mail them out to you by Nov. 15, possibly earlier, thus avoiding danger of freezing in transit to most states.

The culture is very similar to that of Saintpaulias. They require warm temperature, shade, etc. In starting use a similar soil but make a hollow place in the center of soil surface and surround the bulbs with a 1" thickness of a peat and sphagnum mixture. Water very slightly, just enough to keep the peat-sphagnum slightly moist, until sprouts are started. They may be grown in 5" to 7" pots or in wire baskets. Overwatering may cause damping off of leaves or buds.

We can furnish these bulbs in Reds, Violets, Whites, Near Whites and assorted. The latter group contains colors that are difficult to classify, sometimes unusual. These are the Faye Davis Hybrids. They are superior to named varieties. The large flowers are sometimes nearly 5" wide. Price 50c ea., extra large bulbs 65c ea. One bulb of each color class, 5 bulbs for \$2.25. Extra large size, 5 bulbs for \$3.00.

Gloxinia Seed. I have never grown Gloxinia seed but it is said to be easy enough for amateurs to do. Try the larger plastic pots with ⅔ fine grained sandy soil and ⅓ sifted peat. Seed must be covered very lightly. Just a dusting of peat might be better and water from below. Cover pot with a small piece of glass which is removed

daily for an airing and to clean glass. It may be necessary to remove glass entirely when seedlings come up to prevent damping off.

Faye Davis Gloxinia Seed, 25c per packet.

THE ORCHID FAMILY—Orchidaceae

Our expanding orchid list would now require one-fourth of this catalog. Therefore in July we printed it as a separate list and sent to all who are on our orchid mailing list.

This list will be sent to all who request it.

If you are not growing and experimenting with orchids, the most beautiful of all flowers, you are missing too much in life for any plant lover to miss. Just send us 25c for our booklet, "How To Grow Orchids," and see how easy it is. I am sure you will then want the price list so they will be sent together. Perhaps you have tried to grow recently imported dry plants. Many amateurs fail to make them grow.

Don't be discouraged. You started the wrong way. Our plants are living, growing plants, established in pots or wire baskets. You pay more but you get something.

Correction. We did not accurately describe *Epidendrum Mariae Ames* in this list. The flowers are 3" wide. Sepals and two petals are chartreuse green. The long lip is the principal part of the flower and is pure white with a crinkled and wavy edge. They make a nice corsage. When you receive this catalog it will probably be too late to get one in flower. But remember next year.

Epidendrum cochleatum is apparently preparing to flower. At least bud sheaths are appearing. Many *Cattleyas* are in bud sheath stage.

If you do not want to grow orchids in pots or baskets, at least you should plant a bulb of the *Bletilla hyacintha* in your garden. They come in two colors, rose purple and white at 85c ea. These were omitted from the Orchid Price List. Plant them in sandy loam soil if possible but at least make the soil about one-half peat or leaf mould.

We offer 6 *Cattleyas*, in varieties that furnish flowers in fall, winter, spring and summer, for \$65.00. Blooming size *Cattleya* hybrids (5" pots) as low as \$7.50.

RANUNCULUS AND ANEMONES—Ranunculaceae

Ranunculus range in color from red, pink, yellow to white. The strain if well grown produces giant double flowers on tall stems.

Anemones are red, pink, white and blue but blue predominate. The flowers of this strain are mostly single which we prefer in *Anemones*.

Culture. Best planting time is Sept. to Feb. Bulbs start better in a medium temperature. In hot weather, start them in a flat in the cool shade of a tree. In cold weather start them in a moderately warm room. When not over 1" high transfer to garden. For pots, place pots when starting the bulbs as directed for the flats. The best soil is rich sandy loam. To heavier soils add much leaf mould. Do not water much when sprouting as the best bulbs will rot if too wet.

We offer only the large size. They cost much more per bulb but each bulb gives so many flowers that your flowers cost no more and are earlier, larger, better and more sure.

Tecolote Giant Double Ranunculus, $\frac{3}{4}$ " to $\frac{7}{8}$ " diam. 10c ea. \$1.00 doz.

Anemones, large size bulbs, same price as *Ranunculus*.

THE PINEAPPLE FAMILY—Bromeliaceae

Bromeliads include *Billbergia*, *Cryptanthus*, *Aregelia*, *Tillandsia*, *Neoregelia* and many more genera. We list only *Billbergias* which include some of the most unusual and fascinating plants. Not only are the flowers in intriguing pastel shades but the floral display is made brilliant by the large vividly colored bracts that cover the scape.

The leaves form a rosette and are more or less rigid. Some have brightly colored leaves and others are often mottled, striped or barred.

How to Grow Billbergias. All are tropical or semitropical and thus are hardy in outdoor gardens only in the deep south. But they are all easy to grow in pots and add distinction as well as beauty to the window garden.

In pots, they should have a soil of $\frac{1}{4}$ sand or sandy loam and $\frac{3}{4}$ peat, or leaf mould. There should be plenty of drainage material in the pot as poor drainage may soon destroy them. Do not overwater when first planted or in winter when semi-dormant. Nor should they become dry enough to shrivel the foliage. In hot weather when they are growing well, water liberally. Keep a drink of water in their cups in the center.

In the outdoor garden they should have the same soil as recommended for pots. A few, like "nutans," will grow in nearly any soil but will do much better in the type recommended.

They need about half shade. Too much sun will burn and finally destroy the foliage. Those species and varieties having highly colored foliage do not develop their rich colors when too deeply shaded. Most of our plants are grown in a well shaded Clivia house. When well established and growing, richer colors may be brought out by giving a little more sun than we do. Those listed below have rich tropical foliage and usually a very showy inflorescence. All are tropical and are hardy outdoors only in the very deep south, but they are gorgeous pot plants and very easy to grow.

All need about half shade. Too much shade prevents the coloring of those having variegated or colored foliage. Do not overwater when first planted or in winter when semi-dormant, nor should they be dry enough to shrivel foliage. In hot weather, when growing well, water abundantly. Being epiphytic, their natural soil is rotted wood mould or leaf mould but they grow well in a shady garden in a sandy soil to which an abundance of leaf mould or peat has been added. We grow them in pockets of leaf mould on the trunks of palm trees. In pots, give good drainage and a soil of sand or loam one part and leaf mould and/or peat 3 parts. Nature gave the Billbergias a cavity in the center of plant to hold a drink of water.

Billbergia calophylla. Large, bronze-green foliage with contrasting bars of grey. Very large, showy inflorescence of blood-red bracts and blue flowers. \$2.00.

B. corina. Beautiful foliage, barred grey. \$2.50.

B. distachia. Foliage, reddish green with cream spots. Long flower racemes with rose pink bracts and blue flowers with green margin. Blooms early spring and again in late summer. 50c. Three clones, slightly different, one of each for \$1.15.

B. macrocalyx. Grey barred leaves to 18". Bracts rose red. Yellowish green flowers edged light blue. \$4.00.

B. nutans. The most popular of all as it blooms in mid-winter and is very lovely. Pink bracts, blue and green flowers. 50c. Three for \$1.00.

B. pyramidalis. Dark green, luxuriant foliage. Dense spike with bright red bracts. Red petals, tipped violet. For an 8" pot. \$2.00.

B. rubro-cyanea. The most colorful in foliage, showing green, white and red combinations. Inflorescence, crimson bracts, flowers green, edged dark blue. To bring out colors in foliage give more sun exposure being careful that foliage does not burn. Two seedlings of this sanderiana-nutans hybrids at \$1.25 ea. or both for \$2.00.

B. speciosa. Foliage green above. Under side greyish green. Bracts rose, flowers pale green tipped with blue. \$2.00.

B. thrysiflora. Mature foliage faintly barred. Summer blooming. Vivid inflorescence, scarlet bracts, blue and purple flowers. \$1.50.

B. Zebrina. Leaves with contrasting white bands and spots. Salmon bracts and green flowers. \$2.50.

Collection of all ten varieties, \$16.00.

